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ABSTRACT

These environmental study units consist of four modules and a tape-slide presentation on the Everglades National Park. Although not required for completion of the modules, the slide-tape presentation provides a resource for orientation of teachers and parents to camping experience for school children in an environmental education program. The four written modules are: (1) "Ready, Set, Go" - A Planning Module for Principals Who Want to Know How to Plan an Everglade Camping Experience for Their Students; (2) "Care of Equipment" - A Module for Teachers and Students Who Want to Know How to Set Up and Take Care of Their Camping Equipment; (3) "Safety in the Outdoor Classroom" - A Guide on the Rules, Regulations, and Safety Procedures to be Followed During the Camping Experience; and, (4) "One Hundred Environmental Resources for Use in the Classroom or in the Field." (Author/RH)

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ENVIRONMENTAL STUDY UNITS
EXEMPLARY ENVIRONMENTAL EDUCATION

PROGRAM 9044
SUMMARY REPORT

1) Development and Progress

The Everglades Environmental Study Units project involved the cooperation of administrators and teachers of the North Central Area of Dade County and the Everglades National Park Service. From its inception, the project was guided by the support of Dr. Jeff West, Area Superintendent, Harriet Ehrhard, Science Consultant, the Office of Special Programs, and an Advisory Committee for the project. Development of the written modules, curriculum materials, A/V presentation and the purchase of special equipment for the project were the results of joint efforts by teachers and administrators.

Modules

The four written modules are:

Module 1: "Ready, Set, Go"
A planning module for principals who want to know how to plan an Everglade Camping Experience for their students. (An evaluation by teachers and principals of this module rated it as "very useful")

Module 2: "Care of Equipment"
A module for teachers and students who want to know how to set up and take care of their camping equipment.

Module 3: "Safety in the Outdoor Classroom"
A guide on the rules, regulations, and safety procedures to be followed during the camping experience.

Module 4: "100 Environmental Resources For Teachers"
A guide to free or inexpensive resources to be used in the classroom or in the field. (In addition to this reference Module, a complete file of these resource books and materials is available for review at the Curriculum Center).

SE 024 776

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Slide-Tape Presentation

A slide tape presenting an overview of the Everglades Camping Project was also completed. This slide tape is intended as a resource for orientation of teachers and parents to camping experiences for school children in an environmental education program.

Equipment

Funds made available through the project made possible the purchase of equipment and materials to implement the Everglades camping aspect of the project. These funds also provided for curriculum resource materials and field study equipment. A list of the equipment is attached to this report.

Camping Program

Thirteen schools participated in the camping program in which 350 students spent several days in the Everglades under the supervision of teachers, parents and the National Park Service Rangers. In preparation for these overnight camping experiences, teachers and parents participated in special training sessions conducted by the Park Rangers and the Red Cross in first aid measures and in safety procedures in the Everglades. These training sessions were supported by funds obtained through this project.

In planning for the continuation of this program, a survey of schools in the North Central Area in April revealed high interest in expanding the program to more schools. The expectation is that more schools and 625 students will participate in the program in the coming year.

2) Problems

Some of the problems encountered in the project were:

a) Teacher and Parent Training
The need to provide more time to train participating teachers and parents in camping techniques and in broader curriculum adaptation of environmental concepts. Training sessions will be expanded in the coming year.

b) Equipment Management

Since thirteen schools were involved in the camping program, careful checking of equipment prior to going into the field was sometimes overlooked. A systematic control system is now being developed for 1976-77.

c) Camp-sites and Calendar Dates

The Shark Valley and Everglades campsites are limited as to facilities and availability during the year. The addition of more campsites would be of great value to this program.

3) Evaluation

Two formal questionaires were distributed during the year. A rating form for the Module I brought a return from principals and teachers indicating the Module was "very useful". A survey of 13 North Central Area schools indicated that 67 teachers and 625 students were expected to participate in 1976-77.

Park Rangers evaluated each camping group according to 6 criteria. Records of these forms are available for review. Most of the schools were rated excellent in such criteria as; pre-side planning, discipline, participation of teachers and care of equipment.

4) Disbursement

The Office of Contracted Programs will submit under separate cover a final summing up of disbursements for this project.

NORTH CENTRAL AREA CURRICULUM CENTER

Evaluation Of Planning Module For Everglades Camping Experience

Principal and Lead Teacher Rating Form

Name of Rater - Principal________________________ Lead Teacher__________________

School______________________________________ Date__________________________

Please rate the module Ready, Set, Go in terms of its usefulness in helping you plan effectively for your Everglades camping experience. Indicate the degree to which the guidelines and information presented in the module contributed to the planning phase of your school's camping experience. Circle the appropriate number in the margin to the right of each statement. The rating code is as follows:

4 - was extremely useful
3 - was very useful
2 - was moderately useful
1 - was of limited or no use

A. OVERALL

Indicate the degree to which the information presented in this module was helpful in accomplishing the objectives stated below.

(1) enabling the administrator to relate individual school goals to this environmental experience 1 2 3 4

(2) defining legal responsibilities 1 2 3 4

(3) facilitating staff and student selection for the Everglades Camping Experience 1 2 3 4

(4) preparing the administrator for student, staff and parent orientation 1 2 3 4

(5) illustrating the need for planning pre-and-post site activities 1 2 3 4

EVERGLADES ENVIRONMENTAL STUDY UNIT PROJECT
EQUIPMENT LIST

I. Curriculum Resources

1 copy - Plants Poisonous to People
1 copy - Wild Plants
1 copy - Florida Fossils
1 copy - A Guide to Lizards
5 sets - Brevard County Environmental Program
5 sets - Martin County Environmental Program
*1 year subscription - "Ranger Rich"
*1 year subscription - "Envrionmental Education Curriculum Service"
*1 year subscription - "Science and Children"
*1 year subscription - "Audubon"

II. Field Study Equipment

*2	Footlockers
12	Thermometers
15	Compasses
6	Weather Stations
10	7 X 35 Binoculars
25	Rotating Star and Planet Finders
5	Elementary Microscopes
1	Califone Tape Recorders
1	Konica 35 mm. Camera
1	Superscorp Tape Recorder
1	Kodak Ektagraphic Visual Maker #2
12	60-minute audio tapes
24	Kodak Process Mailers
24	Rolls Kodak Film
3	Slide Trays
105	Duplicated Slides

III. Canoeing Equipment

12	Seal-Gentex Life Jackets
8	Beaver-Gnetex Life Jackets
1	Canoe Trailer
1	Master Lock for canoe trailer
1	Trailer Light Kit
4	Grumann Canoes
12	Wood Paddles
*2	Grumann Canoes - 17'
*6	Cushions for Canoes

IV. Camping Equipment and Supplies

2	Igloo Water Coolers - 5 gallon
2	Fire Extinguishers - #5
2	Coleman Propane Stoves
75	Steel Tent Stakers - 12"
1	Propane Refillable adapter
1	Flex connector for Hart Stove
1	Hart Stove
1	Trailer, Model UT-8
4	Refillable Propane Cylinders
1	Propane Tank 20#
3	Valve handles for Hart Stove
4	Corbin padlocks
2	Igloo Ice Chests - 48 quart
2	Johnson & Johnson First Aid Kits
*3	Plastic Igloo Water Coolers
1	Firestone Tire (spare)
*2	refillable Propane Cylinder
9	pieces Hardware (tools)
2	Coleman Tents
2	Coleman Propane Stoves
2	Ground Covers

* Items on Order

EVERGLADES ENVIRONMENTAL STUDY UNIT PROJECT

Items purchased with local funds:

2	Coleman Double Mantle Propane Lanterns
1	Vulcan Hart Grill with stand
1	Dining Canopy
6	Coleman Oasis Tents
6	14 quart metal buckets

Everglades Environmental Study Unit

State of Florida Environmental Mini-Grant

	VIDEO	AUDIO SHOW PG. 1
A	START IN BLACK	
1	SUNRISE FIRST SEVERAL PIX SHOWING INDIVIDUAL STUDENTS and STUDENTS IN SMALL GROUPS	DISC: HERE COMES THE SUN
2		
3	VARIOUS OUTDOOR ENVIRONMENTAL SCENES	
4	SOME SUNRISE SHOTS IF POSSIBLE (PERHAPS 10 SLIDES)	
5		
6		
7		
8		
9	TITLE:	MUSIC UNDER
0	SHOT SIMILAR TO THOSE ABOVE	NARRATOR: THE PAST SEVERAL YEARS HAVE SEEN AN INCREASING NUMBER OF ATTEMPTS TO INVOLVE STUDENTS IN VARIOUS ACTIVITIES DESCRIBED AS "ENVIRONMENTAL EDUCATION."
11	CHILDREN IN SCHOOL-YARD	SOME OF THESE EFFORTS HAVE BEEN QUITE MODEST - SUCH AS PROVIDING SIMPLE EXPLORATORY VENTURES IN THE IMMEDIATE SCHOOL ENVIRONMENT.

	VIDEO	AUDIO SHOW PG.2
12	CHILDREN USING KIT OR PACKAGE STYLE E/E MATERIALS	IN OTHER INSTANCES, SCHOOLS HAVE ADOPTED FULL BLOWN ENVIRONMENTAL EDUCATION PROGRAMS, OFTEN WITH THE SUPPORT OF NATIONAL CURRICULUM PROJECTS OR VARIOUS COMMERCIAL CONCERNS
13	CHILD DOING E/E (OUTDOORS IF POSSIBLE)	WHATEVER FORM ENVIRONMENTAL EDUCATION TAKES, IT CAN GENERALLY BE TRACED TO TWO MAIN ANTECEDENTS
14	AIR POLLUTION	ONE, OBVIOUSLY, IS THE GROWING NATIONAL CONCERN OVER THE DEGRADATION OF NUMEROUS ASPECTS OF OUR ENVIRONMENT...
15	WATER POLLUTION	(NO NARRATION)
16	LITTER	
17	YOUTH INVOLVED IN	...AND, AN AWARENESS THAT THE NATION"S YOUTH WILL SHOULDER A MAJOR RESPONSIBILITY IN THE RIGHTING OF ENVIRONMENTAL WRONGS PERPETRATED BY PREVIOUS GENERATIONS
18	POSTER: REAL CLASSROOM IS OUTDOORS-GET INTO IT	THE OTHER MAIN STIMULUS FOR ENVIRONMENTAL EDUCATION PROGRAMS IS REFLECTED IN THE THEME OF THIS POPULAR POSTER.

SHOW PG. 3

	VIDEO	AUDIO
19	TRADITIONAL CLASSROOM SCENE TEACHER AT BOARD	THOUGHTFUL EDUCATORS HAVE LONG REALIZED THAT THE TRADITIONAL TOOLS OF CHALK, TALK AND PRINT CANNOT BY THEMSELVES MEET THE FULL RANGE OF EDUCATIONAL AND EMOTIONAL NEEDS OF TODAY'S STUDENTS.
20	STUDENTS GETTING ON BUS FOR TRIP	FIELD TRIPS HAVE BEEN EMPLOYED BY EDUCATORS FOR YEARS AS A SUPPLEMENT TO TRADITIONAL CLASSROOM INSTRUCTION. UNFORTUNATELY, SUCH TRIPS HAVE TOO SELDOM BEEN RELATED TO ENVIRONMENTAL THEMES THAT CAN BE EXTENDED UPON RETURN TO THE CLASSROOM.
21	C. U. INDIVIDUAL STUDENT THOUGHTFUL POSE	SOME OF THE MORE IMAGINATIVE NEW CONCEPTS IN ENVIRONMENTAL EDUCATION ARE BASED ON THE PREMISE THAT SCHOOL CAN BE MADE MORE LIKE LIFE, AND, THAT THE "ENVIRONMENT" IN ENVIRONMENTAL EDUCATION REFERS TO THE INNER ENVIRONMENT OF THE INDIVIDUAL AS WELL AS THE IMMEDIATE ENVIRONMENT IN WHICH ONE FINDS HIMSELF.
22	STUDENTS	IN DADE COUNTY"S NORTH CENTRAL AREA, ENVIRONMENTAL EDUCATION PROGRAMS HAVE TAKEN VARIOUS FORMS, BUT ALL ARE DERIVED FROM THE PHILOSOPHY THAT ENVIRONMENTAL EDUCATION EMBRACES THOSE ACTIVITIES INSIDE OR OUTSIDE THE SCHOOL WHICH ENABLE THE STUDENT TO ASCERTAIN THE MEANING OF HIS EXISTENCE.
23	ENVIRONMENTAL EDUCATION CENTER	FOR SEVERAL YEARS, NORTH CENTRAL AREA STUDENTS HAVE PARTICIPATED IN DISTRICT ENVIRONMENTAL EDUCATION PROGRAMS. ONE SUCH PROGRAM IS THE ENVIRONMENTAL EDUCATION CENTER, LOCATED ON THE SHORES OF THE ATLANTIC OCEAN, WHICH PLACES A DISTINCT EMPHASIS ON THE NATURAL ENVIRONMENT.
24	STUDENT MEASURING AIRPLANE NOISE	ANOTHER IS THE CURES PROGRAM, WHICH FOCUSES ON URBAN ENVIRONMENTAL PROBLEMS AT VARIOUS SITE LOCATIONS THROUGHOUT DADE COUNTY.

SHOW PG. 4

	VIDEO	AUDIO
25	STUDENTS WORKING ON STUDY SHEETS OUTDOORS	THESE PROGRAMS, WHILE PREDICATED ON PRE-FIELD ACTIVITIES AND EXTENDED THROUGH POST-SITE EXPERIENCES, INVOLVE STUDENTS IN FIELD WORK FOR ONLY ONE DAY AT A TIME.
26	EVERGLADES ACTIVITY	IN DEVELOPING ITS OWN ENVIRONMENTAL EDUCATIO PROGRAMS, THE NORTH CENTRAL AREA HAS PIONEERED IN AN INTENSIVE AND EXTENDED EXPERIENCE IN WHICH STUDENTS ARE INVOLVED IN A THREE TO FIVE DAY CAMPING EXPEDITION IN THE FLORIDA EVERGLADES.
27	BRIGHT GROUP WITH SIGN	THE EVERGLADES CAMPING PROGRAM IN THE NORTH CENTRAL AREA GREW OUT OF A HIGHLY SUCCESSFUL EVERGLADES CAMPOUT BY STUDENTS FROM BRIGHT ELEMENTARY SCHOOL IN 1972.
28	EVERGLADES ACTIVITY	FOLLOWING THAT SCHOOL"S INITIAL SUCCESS, OTHER SCHOOLS IN THE AREA EXPERIMENTED WITH THEIR OWN OUTDOOR CLASSROOMS IN THE EVERGLADES.
29	TENTS OR OTHER EQUIPMENT	THE AREA OFFICE SUPPORTED SUCH EFFORTS WITH THE PURCHASE OF EQUIPMENT AND WITH MONEY FOR TRANSPORTATION.
30	EQUIPMENT	THE EVERGLADES OUTDOOR CLASSROOM RECEIVED FURTHER IMPETUS WHEN THE NORTH CENTRAL AREA WAS AWARDED A MINI-GRANT THROUGH FLORIDA"S EXEMPLARY ENVIRONMENTAL EDUCATIO PROGRAM, WHICH PROVIDED FOR THE PURCHASE OF ADDITIONAL EQUIPMENT AND THE DEVELOPMEN OF INTERDISCIPLINARY CURRICULUM MATERIALS TO SUPPORT THE PROJECT.

SHOW PG. 5

	VIDEO	AUDIO
31		THE PROGRAM AS IT IS CONDUCTED TODAY INVOLVES MUCH MORE THAN JUST A TRIP TO THE EVERGLADES.
32	TEACHERS AND ADMINISTRATORS PLANNING	AT THE OUTSET, SCHOOLS INTERESTED IN UNDERTAKING [illegible] THE VENTURE ARE ENCOURAGED TO RELATE THE FIELD EXPERIENCES TO SCHOOL GOAL STATEMENTS.
33	STUDENTS	THEN BEGINS A LONG, CAREFUL PERIOD OF PLANNING. EACH GROUP CHOSEN TO PARTICIPATE IN THE CAMPOUT IS COMPOSED OF 25 STUDENTS FROM GRADES 5 or 6. THESE STUDENTS ARE REPRESENTATIVE OF THE TOTAL SCHOOL POPULATION, AND HAVE BEEN JUDGED AS CAPABLE OF BENEFITTING FROM INSTRUCTION IN THE GOAL AREA.
34	TEACHERS IN WORKSHOP OR WORKING WITH EQUIPMENT	TEACHER PARTICIPANTS, ALSO CAREFULLY SELECTED, ARE REQUIRED TO COMPLETE A FIRST AID COURSE, AND MUST PARTICIPATE IN A WORKSHOP CONDUCTED BY THE NATIONAL PARK SERVICE, WHICH INCLUDES AN OVERNIGHT CAMPOUT IN THE PARK.
35	RANGER AT ORIENTATION SESSION	THE PARK RANGERS, WHO PARTICIPATE IN VIRTUALLY ALL PHASES OF THE PROGRAM, ARE AVAILABLE FOR PARENT ORIENTATION SESSIONS TO HELP ANSWER ANY QUESTIONS THAT MIGHT ARISE.
36	AREA CURRICULUM SPECIALISTS IN CLASSROOM	IN THE CLASSROOM, AREA CURRICULUM SPECIALISTS WORK WITH STUDENTS AND TEACHERS IN DESIGNING ACTIVITIES IN ART AND SCIENCE THAT [illegible] RELATE TO EXPERIENCES ON THE TRIP.

VIDEO AUDIO SHOW PG. 6

	VIDEO	AUDIO
37	SCHOOL CAMPOUT	ON THE WEEKEND BEFORE THE TRIP, STUDENTS, TEACHERS AND SOME PARENTS CAMPOUT OVERNIGHT ON THE SCHOOL GROUNDS.
38.	STUDENTS BOARDING BUS	ON THE DAY OF THE TRIP, FIELD STUDY COMMENCES THE MOMENT THE BUS LEAVES SCHOOL.
39	CITY SCENE	STUDENTS HAVE AN OPPORTUNITY TO OBSERVE CHANGES IN THE LANDSCAPE, WHICH RANGE FROM THE DENSELY URBAN CHARACTER OF THE INNER CITY...
40	STUDENTS IN FIELD OR FARMLAND FROM SS 68	...TO THE RICH AGRICULTURAL REGION OF SOUTH DADE COUNTY...
41	EVERGLADES - VAST EXPANSE OF SAWGRASS	...TO THE VAST EXPANSES OF A UNIQUE NATURE PRESERVE.
42	RANGER GREETING STUDENTS	AT THE (FLAMINGO) CAMPSITE, A PARK RANGER IS ON HAND TO MEET THE CAMPERS.

	VIDEO	AUDIO
43	STUDENTS UNLOADING GEAR	AS THE STUDENTS SET UP CAMP, THE LESSONS LEARNED IN THE SCHOOL CAMPOUT PAY OFF.
44.	STUDENTS SETTING UP CAMP	(NO NARRATION)
45	CAMPFIRE	AFTER DINNER, THE GROUP PARTICIPATES IN THE REGULAR CAMPFIRE PROGRAM CONDUCTED FOR VISITORS TO THE PARK.
46	BREAKFAST	THE FIRST FULL DAY AT THE PARK BEGINS WITH A HEARTY BREAKFAST...
47	NATURE WORK	...FOLLOWED BY A NATURE WALK.
48	NATURE WALK	(NO NARRATION)

49	APPREHENSIVE STUDENT WITH SNAKE	ONE SENSITIZING ACTIVITY THAT GENERATES SOME APPREHENSION IS THE SNAKE DEMONSTRATION.
50	CLOSE UP, SNAKE	BUT STUDENTS SOON LEARN THAT SNAKES,TOO,HAVE A ROLE TO PLAY IN THE ECOLOGY OF THE PARK,
51	STUDENT WITH SNAKE - NON-APPREHENSIVE	AND THAT THEY AREN"T SUCH BAD CREATURES AFTER ALL.
52	SNAKE BEHIND GLASS	POISONOUS SNAKES ARE NEVER HANDLED, BUT ARE OBSERVED SAFELY BEHIND GLASS.
53	SAWGRASS WATER SCENE NO PEOPLE	MUSIC IN: JUNGLE BOOK :05 AND UNDER NARRATOR: IT HAS BEEN SAID THAT "THE EVERGLADES RESTS ONTHE PALM OF THE EARTH AND DRINKS THE WARM WATERS OF THE SUMMER RAIN."
54	MANGROVE SWAMP - NO PEOPLE	AS THE WATERS FLOW SLOWLY SOUTHWARD TOWARD FLORIDA BAY, THEY PASS FROM OPEN SAWGRASS PLAINS TO THE DENSE UNDERGROWTH OF THE MANGROVE SWAMP.

SHOW PG. 9

	VIDEO	AUDIO
55	STUDENTS IN CANOES	STUDENT CAMPERS GET A RARE OPPORTUNITY TO PENETRATE THESE WILDERNESS WATERWAYS ON A THREE MILE CANOE TRIP INTO THE VERY HEART OF THE EVERGLADES.
56	CANOE TRIP	MUSIC UP (NO NARRATION)
57	CANOE TRIP	
58		HERE, STUDENTS OBSERVE FIRST HAND THE RARE FAUNA AND FLORA OF ONE OF NATURE"S WONDERLANDS.
59		BACK ON LAND, STUDENTS EXPLORE THE ROYAL PALM AREA UNDER THE GUIDANCE OF A PARK RANGER.
60	ROYAL PALM	AN ABUNDANCE OF INTERESTING PLANTS & ANIMALS IS FOUND AT EVERY TURN.

VIDEO AUDIO SHOW PG. 10

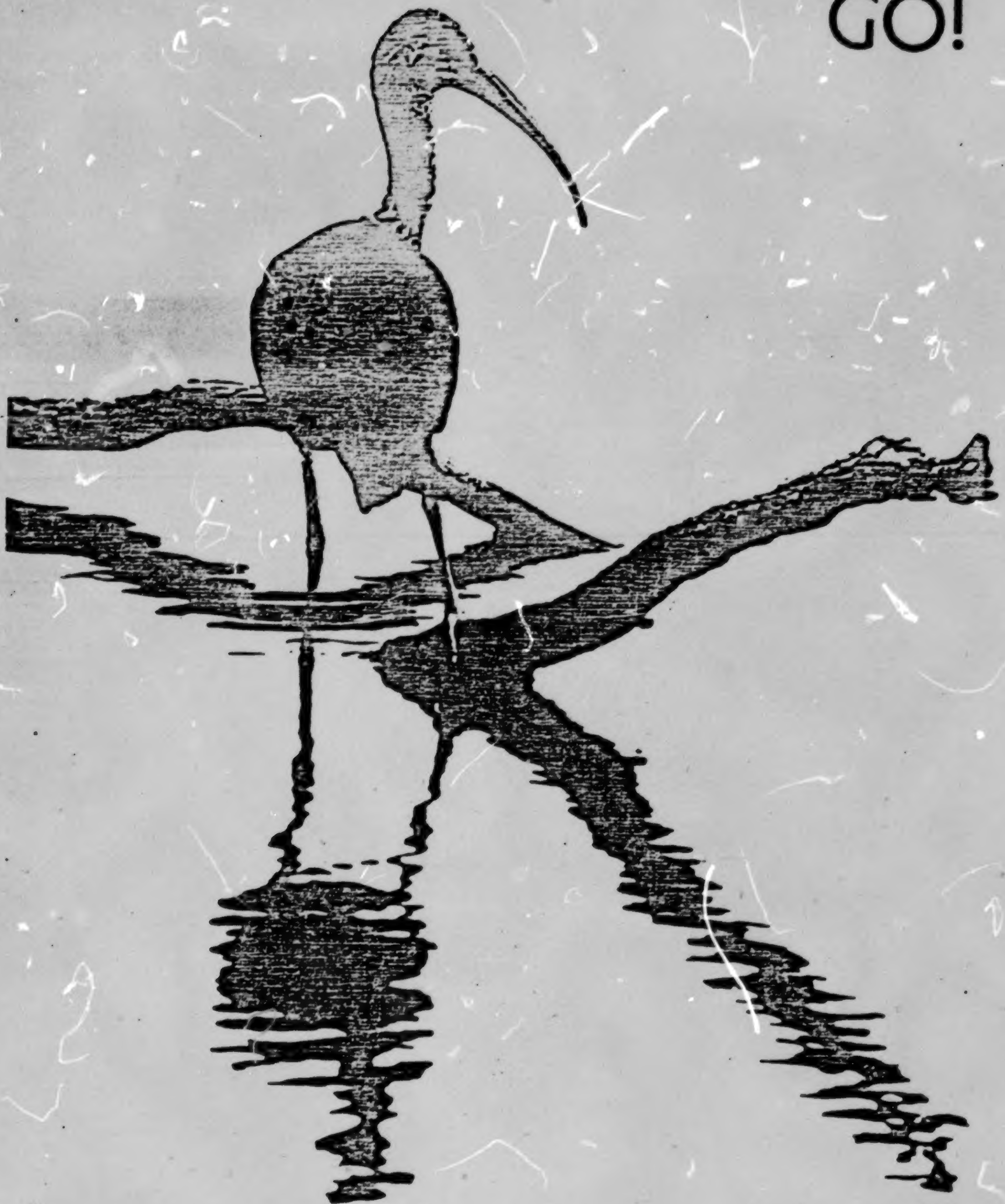
61	PLANTS, BIRDS, ALLIGATORS	NO NARRATION...MUSIC UP
62	TREE SNAILS, ETC.	
63.		
64		
65	BELLY BUTTON BOTANY	STUDENTS EMPLOY A VARIETY OF TECHNIQUES TO STUDY...
66	SKETCHER	...AND TO DOCUMENT THEIR STUDIES
67	PHOTOGRAPHERS	NO NARRATION
68	AL & STUDENTS	TEACHERS ASSIST STUDENTS IN RECORDING THEIR IMPRESSIONS.

SHOW PG. 11

	VIDEO	AUDIO
69	STAND-UP LUNCH	KEEN APPETITES ARE SATISFIED AS LUNCH IS SERVED STAND UP STYLE.
70	SLOG INTRO	A HIGHLIGHT OF THE TRIP, AND A GREAT SENSITIZING EXPERIENCE IS THE SLOUGH SLOG.
71	SLOG	MUSIC IN STUDENTS EXULT IN THE CHANCE TO GET WET AND DIRTY WITHOUT BEING REBUKED BY ADULTS.
72	SLOG	MUSIC UP
73	SLOG	MUSIC UNDER
74	CONTROLLED BURN	FIRE, USUALLY CONSIDERED A DESTRUCTIVE ELEMENT, IS SHOWN TO BE A USEFUL TOOL, WHEN MANAGED PROPERLY, FOR MAINTAINING THE BALANCE OF THE EVERGLADES ECOSYSTEM.

	VIDEO	AUDIO
75	CONTROLLED BURN	HERE, RANGERS DEMONSTRATE A CONTROLLED BURN.
76	CLEANING UP	LATER, CAMPERS DEMONSTRATE THAT A LITTLE CONTROL AND ORDER ARE NEEDED TO MAINTAIN A CLEAN CAMPSITE.
77	BREAKING CAMP	WHILE THE OUTDOOR CLASSROOM NEVER SHUTS ITS DOORS, THERE COMES A TIME WHEN THE STUDENTS HAVE TO RETURN TO THE FOUR-WALL CLASSROOM. MUSIC IN: HERE COMES THE SUN
78	EVERGLADES CLOSING SHOTS	IT IS THERE, HOPEFULLY, THAT THE PATTERNS AND PRINCIPLES, THE SIMILARITIES AND VARIETIES, OBSERVED AND EXPERIENCED SO FULLY IN THE NATURAL SETTING, WILL BE EXTENDED TO THE CULTURAL LANDSCAPE, AND RELATED TO THE INNER ENVIRONMENT OF EACH INDIVIDUAL.
79		MUSIC UP
90		MUSIC CUT
	BLACK	

READY,
SET,
GO!



MODULE 1

MODULE I

Ready, Set, Go

a planning module for principals who want to know how to plan an Everglades Camping Experience for their students

The Everglades Environmental Study Unit

The curriculum project was funded by a mini-grant from the Office of Education, Department of Education, Ralph D. Turlington, Commissioner

DADE COUNTY PUBLIC SCHOOLS
Miami, Florida

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The Everglades Environmental Study Unit Project was developed by the North Central Area Curriculum Center in cooperation with Everglades National Park Rangers, teachers and administrators.

Dr. Jeff West, Area Superintendent
Mr. Herbert C. Bloom, Area Staff Director
Mrs. Harriet Ehrhard, Science Consultant

This is one of a series of four (4) modules developed for use by teachers who wish to take students on an extended camping trip in Everglades National Park. These modules provide needed information and resources that enable educators to better use the "outdoor classroom". Additionally, these modules provide resources for teachers to use in their classroom applying concepts of environmental education in seven curriculum areas.

Overview - "Everglades Environmental Study Unit"
A descriptive slide/tape presentation for use by administrators, teachers and parent groups.

Module I - "Ready, Set, Go"
A planning module for principals who want to know how to plan an Everglade Camping Experience for their students

Module II - "Care of Equipment"
A module for teachers and students who want to know how to set up and take care of their camping equipment.

Module III - "Safety in the Outdoor Classroom"
A guide on the rules, regulations, and safety procedures to be followed during the camping experience.

Module IV - "100 Environmental Resources For Teachers"
A guide to free or inexpensive resources to be used in the classroom or in the field.

These modules and slide/tape presentations are available for loan from the North Central Area Curriculum Center, 6221 Northwest 29th Avenue, Miami, Florida.

READY, SET, GO!

RATIONALE 1

MAJOR GOAL OF MODULE 1

OBJECTIVES OF MODULE 1

*Why Do This At All, goal statements clarified 2

*Complying With Legalities 3-5

*Staff and Student Selection 5-6

*Building Desires and Alleviating Anxieties, the orienting of various groups 6-9

*Tailoring the Program, planning pre-and-post site activities 10

*Camping Equipment, the intricacies of providing a home away from home 11

*Full Stomachs, happy campers 11-13

*Six Weeks Countdown, a principal's checklist 14-16

APPENDIX 17-26

Rationale

The Everglades Environmental Camping Program is unique in that it is a two to five day extended field trip into an unfamiliar environment. Both teachers and their students will be attracted and intrigued with the many events of interest which may distract them from the need to take proper safety precautions. Adequate pre-site planning and preparation is necessary for a safe and enjoyable experience outside of the four-walled classroom.

Major Goal

This module will provide teachers with guidelines to plan for the safety of students and themselves while on a camping trip to the Everglades.

Objectives of Module

This module will:

1. Provide guidelines to manage student behavior on school buses.
2. Provide guidelines in the use of the Everglades National Park facilities.
3. Provide guidelines in case of hazardous weather conditions.
4. Provide guidelines for safety of students during water activities.
5. Provide guidelines for fire safety.
6. Provide guidelines for use of combustible fuels.
7. Provide guidelines for students hiking on nature trails.
8. Provide guidelines for simple first aid procedures.
9. Provide the teacher with a resource reference for classroom materials dealing with safety procedures.

In regard to safety on the Everglades camping trip, it should be noted that all rules, regulations and procedures that apply in the classrooms and to field trips also apply to the camping trip. In general, three basic duties should concern the teacher on a camping trip - 1) Adequate supervision; 2) Proper instruction; 3) Maintenance of equipment.

BEFORE ANY ACTIVITY

Before the first activity when children arrive at a site, it is important to review safety procedures. The children need to be instructed where the camp-site boundaries are. They need to be told not to go near the water without a supervisor; that there is no swimming; no tree climbing, and that they must wear their shoes at all times.

One part of the orientation should be a lesson on hazards involving animals and plants of the area, both on land and in the water.

Before each field trip, the instructor repeats the various procedures to be observed and the cautions to be exercised.

TRANSPORTATION

When an independent bus vendor is contracted to provide transportation, he needs to comply with all state and local requirements. The bus driver and the schools need to be familiar with the following School Board regulations.

1) All trips are to be carefully planned and have adequate supervision of at least one teacher per class so as to maintain order on the bus. It is the responsibility of the teacher to make certain through classroom discussions that the pupils are thoroughly familiar with bus rules and know that they are required to obey these rules. It shall be the teacher's responsibility to see that all passengers observe classroom conduct while riding the bus. The teacher must remain with the bus driver untill all passengers have completed the trip.

2) Wet, dirty, improper or any other dress attire which would make the bus objectionable for regular school bus use will not be permitted on the bus.

3) Eating, drinking and singing will not be permitted on buses.

4) Only stops approved on the original Field Trip Requisition are to be made.

5) Smoking is not permitted on the bus.

6) Schools using buses for night trips are required to help the drivers clean up the inside of the bus upon completion of such trips.

7) The Sunshine State Parkway is not to be used for Dade County school bus service.

8) Teachers or chaperones are responsible for paying tools and parking fees when they are required.

When chaperones accompany students on the field trips, the following School Board regulations must be followed:

a) All chaperones shall be selected and authorized by the principal to ride the bus.

b) Chaperones are to be limited to no more than five to any given bus.

c) Chaperones are not permitted to bring their child on field trips unless such child is a member of the participating class group.

d) Women who are visibly pregnant are not permitted to serve as chaperones.

e) All chaperones are expected to abide by the school bus rules and regulations and see that pupils obey them.

Source: 6Gx13-6153, School Board Rules, The School Board of Dade County, Florida

EVERGLADES NATIONAL PARK - RULES AND REGULATIONS

Everglades National Park has established regulations that must be observed by all campers including school groups.

At Flamingo

The following rules and regulations must be observed by all campers:

1) Registration for campsite use is required prior to occupation of the site.
2) Place all refuse in proper receptacles.
3) Do not dump sewage or waste water on the ground.
4) Camping is allowed in designated areas only.
5) The speed limit in campground areas is 15 m.p.h.
6) Garden hoses may not be connected to the water outlets in the campground.
7) The collection or burning of driftwood in the Flamingo area is not permitted.
8) Vehicles must be parked on the paved parking strips provided and are not allowed off the pavement.
9) Fireworks are not permitted.
10) Quiet hours are from 10:00 p.m. to 6:00 a.m.
11) Hanging clothing from vegetation, or the attachment of wires, rope, etc., to the vegetation is prohibited.
12) Adults accompanying the groups on motocycles should ride them to and from the campground only. Please respect other people's rights to quiet by not "cruising" in the campground.
13) No children should be allowed in the maintenance area when getting ice or canoes.
14) If your school canoes, one adult should be in each canoe at all times, as well as a life jacket for everyone.

15) Recreational equipment such as frisbees and footballs are discouraged. Environmental activities should be planned instead.

16) Fishing is discouraged. The danger of hooks makes other alternatives more desirable.

Source: Guide to "The National Environmental Education Development Program - Everglades National Park

Regulations At Shark Valley

The public is not permitted to camp at Shark Valley. In general, rules pertaining to Flamingo are to be observed at Shark Valley. In addition, a few special rules must be observed.

Camping for NEED groups is located at the Shark Valley observation tower. Private vehicles are not permitted beyond the parking area near the Shark Valley entrance. Transportation is provided in the form of a tram (a mass-transit, open-air bus).

Important Regulations For All Participants

1) The coordinator for the school is selected by the school principal and area director. The coordinator is responsible at all times for the conduct of the group.

2) Qualified teachers and parents who wish to accompany the group and participant in the program are the responsibility of the coordinator and the principal.

3) The total group size is limited to 30 people in either area. This includes both students and adults.

4) Food of any kind is not allowed on any hikes or on any trails. The temptation to feed animals is simply too great. Violation of this rule will result in immediate dismissal from the park.

5) Collecting of any type within the park is not permitted.

6) Throwing or skipping rocks or other objects at wildlife is not permitted. Violation of this rule will result in immediate dismissal from the park.

7) Transportation to and from the park must be arranged by the school.

Source: Guide to "The Everglades National Environmental Education Program" - Everglades National Park

Lightning Protection

The lightning hazard is greatest among persons whose occupations keep them outdoors. The probability if injury to the individual from lightning is in general very small, except under certain circumstances of exposure out-of-doors.

The Lightning Protection Code provides guidelines for personal safety during a thunderstorm.

Personal Conduct

(a) Do not go out of doors or remain out during thunderstorms unless it is necessary. Seek shelter inside buildings, vehicles, or other structures or locations which offer protection from lightning.

(b) Seek shelter in the following places which protect personnel from lightning.

1) Large metal-frame buildings.

2) Dwellings or other buildings which are protected against lightning.

3) Large unprotected buildings.

4) Automobiles and buses with metal tops and bodies.

5) Trains and streetcars.

6) Trailers with metal bodies.

7) Enclosed metal boats or ships.

8) Boats which are protected against lightning.

9) City streets which are shielded by nearby buildings.

(c) If possible, avoid the following places which offer little or no protection from lightning.

1) Small unprotected buildings, barns, sheds, etc.

2) Tents and temporary shelters.

3) Automobiles (non-metal-top or open).

4) Trailers (non-metal).

(d) Certain locations are extremely hazardous during thunderstorms and should be avoided if at all possible. Approaching thunderstorms should be anticipated and the following locations avoided when storms are in the immediate vicinity.

1) Open fields (farms).

2) Athletic fields.

3) Golf courses.

4) Swimming pools, lakes and seashores.

5) Near wire fences, clotheslines, overhead wires and railroad tracks.

6) Isolated trees.

7) Hilltops and wide open spaces.

In the above locations it is especially hazardous to be riding in or on any of the following during lightning sotrms.

1) Tractors and other farm machinery operated in open fields.

2) Golf carts, scooters, motorcycles and bicycles.

3) Open boats (without masts).

(e) It may not always be possible to choose a location that offers good protection from lightning. Follow these rules when there is a choice in selecting locations.

1) Seek dense woods - avoid isolated trees.

2) Seek depressed areas - avoid hilltops and high places.

3) Seek small unprotected buildings, tents and shelters in low areas - avoid unprotected buildings and shelters in high areas.

Since the tents are located in an exposed place, they should not be utilized during thunder and lightning storms. During these times, it is recommended that students be loaded onto the metal-topped bus if available or be taken to a shelter that would afford a greater degree of protection.

Cold and Wet Weather

In order to maintain a comfortable body environment during the camping trip, it will be necessary to take certain preventive measures.

Students should bring with them a rain coat and a warm jacket to be worn during inclement weather. If a rain coat is not easily available, a poncho may be made from a large plastic trash bag. Wet clothing should be changed as soon as possible to prevent loss of body heat and chills.

Source: National Fire Protection Association -
National Fire Code

SAFETY DURING WATER ACTIVITIES

Adequate supervision of students is of the greatest importance during activities near or in water. Teacher should identify non-swimmers in the group so that additional precaution may be undertaken. This information should be obtained on the parent permission slip.

1) While the "buddy system" is used during most of the activities, it is most important when students are near or in water. Students should be told never to leave a buddy standing in the water alone while he/she goes ashore. They should never be permitted near water without adequate supervision.

2) Swimming for recreation on regular field trips is not permitted except as specifically authorized.

3) For walking in wet areas (i.e., slogging or seining) students must wear shoes.

4) Water conditions must be safe before wading or seining is permitted.

5) A life ring or other approved floating device which is suitable for being thrown some distance should be available at all time.

6) In the interest of good conservation practice, students should take only those animal specimen needed for laboratory studies, returning the remainder of the catch to the water. Approval by Park Rangers is required prior to collecting specimens.

7) It should be assumed that all students are non-swimmers.

FIRE SAFETY

- Obey the law. Make sure campfires are permitted at your campsite.
- Clear away leaves, pine needles or any flammable material for several feet around your site.
- Locate the fire down-wind from your campsite away from logs, stumps or low branches.
- Keep your campfire small, controllable, and well away from tent.
- Build your fire where it is protected from wind and breezes. Flying sparks are dangerous.
- Don't leave a fire thinking it will go out by itself. Break up coals, spread and soak with water. Stir and soak twice more, then cover with dirt or sand.
- Charcoal fires take extra care to extinguish. Soak heavily.
- Keep charcoal grill far away from tent.
- Do not throw lighted cigars or cigarettes from car.
- Crush smoking material, then tear it apart.
- Use an ashtray. It's safer and cleaner.
- Hold extinguished matches until cool, or break them, before tossing aside.
- Keep sleeping bags a safe distance from working appliances and fire.
- Keep matches out of reach of children.
- Lanterns, stoves and fuel should not be permitted in tents.

In Case of Fire

- Get out of tent.
- Send for help immediately.
- Beat fire with wet clothing or bedding.
- Work it into the wind (prevents spreading).
- Dig dirt to trench and throw on fire.
- Aid firefighters when they arrive.

Source: Coleman Camp Sense, The Coleman Co., Inc.
250 No. St. Francis, Witchita, Kansas

FUEL SAFETY

Follow the manufacturer's instructions when operating portable stoves, heaters, lanterns or any other equipment that uses fuel. Use care when filling your appliances. Do it in the open, away from fires and other flame sources. DO NOT REMOVE THE FUEL CAP OR FILL ANY APPLIANCE WHILE ANY PART IS STILL HOT TO THE TOUCH. Wipe up any spilled fuel and safely dispose of the rag. No smoking near fuel. Keep fuel in an approved metal container and store in the open out of the sun and away from the campfire. Never store fuels in a closed tent. Be sure your stove or lantern isn't too near, or touching, the tent fabric. Keep fuel-burning appliances away from conbustible materials.

Source: Coleman Camp Sense, The Coleman Company, Inc.
250 No. St. Francis, Witchita, Kansas 67201

HIKING SAFETY

Hiking on one of the many trails in Everglades National Park is a highlight of the activities planned during the week. These guidelines will make the hike a safe and more enjoyable activity.

Foot Care

1) Toe nails should be kept fairly short but not uncomfortably so.

2) Socks must be worn with shoes.

Walking

1) Use the "Buddy System" on hikes.

2) Walk with your feet pointed straight ahead because this forward-pointed stride, or so called "Indian Walk" in better-balanced, less fatiguing and more efficient.

3) The youngest, smallest or slowest walker - may go first to set the pace. Adults should be dispersed evenly throughout the hiking group.

4) Avoid stepping on logs, rocks, or exposed roots. A small obstacle of that kind may slip or shift under your weight perhaps causing falls or sprains. Some hikers caution that you should not place your feet where you cannot see because of the possibility of a snake hiding on the other side of the log or rock.

5) Hold aside any low branches so they won't whip back into the hiker following you or else maintain a safe spacing between members of the group.

6) Also be sure to call out a warning to those behind you if you spot a hole or other hazard.

Rest Stops

1) The most common procedure is to stop for five minutes every half hour or every two miles.

2) The lunch break is one rest stop that must not be cut short. Too much exertion immediately after eating can cause cramps. After a meal, rest for fifteen minutes to half an hour before starting again.

SAFETY IN HOT WEATHER

1) Try to stay in the shade as much as possible, and keep a hat on your head.
2) Drink plenty of water, but drink it slowly - especially if the water is cold.

Heat Exhaustion

Too much exertion in hot weather can cause heat exhaustion. The symptoms of this dangerous condition are a weak pulse, excessive sweating, pronounced paleness, and slow, shallow breathing.

A person suffering from heat exhaustion should be kept out of the sun and should sip small amounts of a stimulant - coffee or tea.

Sunstroke

Sunstroke, the result of over-exposure to strong sun, is quite different. Symptoms include a flashing of face and body, with the skin becomming hot and dry. Often the pupils of the eyes become enlarged and sometimes the victim, loses consciousness (which does not usually ahppen in cases of heat exhaustion). If the victim is conscious, he should be given a cool drink to sip slowly, but no stimulants. He should be placed in a cool area, and ice or cold-water packs should be applied to his face, neck, arm and shoulders. If possible, get him to a doctor.

Sunburn

Sunburn can usually be prevented by the use of a long visored cap or wide brimmed hat, sunglasses, long-sleeved shirt and long pants, plus a liberal application of anti-sunburn lotion and the relaization that too much exposure can produce a bad burn even on a cool day.

Source: The Hiker's Bible by Robert Elman, Doubleday and Company, Inc., Garden City, New York, 1973

GUIDELINES FOR HIKING AT ROYAL PALM AND LONG PINE KEY

These guidelines have been developed by Everglades National Park for students taking field trips to Royal Palm and Long Pine Key.

1) No one should be allowed to take food of any kind on any of the trails.
2) Please stay on designated trails.
3) Throwing rocks, climbing trees, and running to any degree is prohibited.
4) If students are to be allowed to purchase refreshments at Royal Palm, they should have the exact change prior to their arrival (25¢ for drinks and 15¢ for potato chips, candy, etc.).
5) There are alligators in the lake at Long Pine Key; therefore, classes utilizing this area should be closely supervised. If students have to use the picnic tables near the lake, a teacher should sit with them to be certain they do not feed or antagonize the alligators.
6) Before leaving the area, have the students establish litter patrols. Remember, even though you're only one or two classes from your school, to us, you represent your school.

Students failing to adhere to the above guidelines may forfeit the opportunity for their school's groups to visit the park again during the year.

FIRST AID

There are many small incidents on field trips that will require First Aid attention. These should present no major problems if good common sense is used. The material that follows will be of use as a guide line. A good First Aid course is a required part of every field teacher's background. The Red Cross will provide courses at your request.

Prevention is always the best part of any First Aid - keeping this in mind students should be:

1) Warned about sharp objects in shirt pockets and on belts.
2) Advised about proper footwear.
3) Informed in advance about a trip.
4) Shown how to recognize poisonous plants.
5) Told about the habits and dangers of animals.

Some possible sources of injury and treatment thereof are as follows:

1) INSECT STINGS

   Since most stings are acid, application of a base to the sting area will help. Make sure that the stinger is no longer in the wound. Apply a paste made of baking soda and water to affected area. Watch for signs of allergic reaction to the sting. If severe swelling, pain or respiratory distress occurs consult a physician as soon as possible.

2) PLANT POISONING

   The most common is poison ivy which contains the oleoresin urushiol. This hazard is greatest during spring and summer months.

   After contact, the skin becomes red and small blisters appear, following by itching. As blisters break, the area may increase in size.

   Soap and water followed by rubbing alcohol applied to the wound will minimize the reaction. Calamine lotions may relieve the itching.

3) SPRAINS AND FRACTURES

A. Sprains

Sprains can be prevented by wearing proper footwear, making sure footwear is laced properly.

If however, sprains should occur in field work they should not be ignored as they can become progressively worse. They occur when a moveable joint is pushed past its normal stopping point and damages the soft surrounding tissues. If available, immediate applications of cold compresses will reduce pain and swelling. After swelling stops apply warm compresses.

A sprained member should not be used unless it is necessary. Bandaging a sprained ankle and then walking does not help the sprain, in fact, it may prolong the recovery time.

B. Fractures

Fractures, or broken bones, are classed as open or closed. An open fracture is associated with a skin wound extending from the surface to the fracture. A closed fracture is simply a broken bone.

Prevention follows the same lines as above in sprains. Falls cause the majority of all fractures.

In order to protect an injured person, a fracture must be immobilized by the best means available as soon as possible. Magazines, boards, sticks, blankets may be used to provide support for a fracture. Swelling accompanies a fracture. Therefore the binding on the support material must be checked periodically to insure that curculation is not impaired. Medical attention is necessary.

4) WOUNDS

Minor wounds should be cared for immediately to prevent infection. Soap and water are the best prevention available to the first aider. They should be washed and bandaged.

Severe wounds obviously will need medical attention as soon as possible. Bleeding should be stopped immediately by:

1) Direct pressure on the wound along with elevation. OR

2) Vessel pressure near the wound as required (brachial artery (arm) or femoral artery (leg). OR

3) Tourniquet - used as a last resort - once applied, do not loosen. Let a physician remove the tourniquet.

5) ARTIFICIAL RESPIRATION

Stoppage of breathing requires immediate action to maintain life. The best method, always available, is mouth to mouth resuscitation. Check the victims mouth for obstruction. Tilt the head back so that the jaw "juts" out, gently pinch shut the victim's nose, cover his mouth with yours, and blow gently until the chest shows expansion. If no expansion occurs re-check the mouth for obstruction, reposition the head and try again. As soon as the chest starts to rise or expands, remove your mouth and let the air escape from the victim's lungs. Then cover his mouth again and blow.

Keep this procedure going at the rate of 12 times a minute until the victim recovers or medical help is obtained. If the victim recovers - watch him carefully until medical attention is available as he may suffer a relaspe.

6) SNAKE BITE

If a student or any other person is bitten by a snake, he should be kept calm and relax as much as possible. Apply a cold compress to the bite.

Call for assistance in order that the victim may be transported to a hospital. If the bite occurs while on a trail, the victim should be carried to an area more accessible to emergency transportation. An effort should be made to identify the kind of snake. This information should be given to the paramedic or ranger.

SAFETY PROCEDURES - SUMMARY

The Environmental Education Program is designed so that you can learn about the environment and have fun at the same time.

For a safe visit observe the safety rules below.

1) USE THE BUDDY SYSTEM AT ALL TIMES. Stay with your buddy and remain with your group throughout the program. If you need to leave the group get permission from your teacher.

2) NO SWIMMING AT ANY TIME. Our shore trip is a wading trip only. Our purpose is to look down into the water to learn about life in the ocean. When wading stay dry above the waist. (Wading means walking in shallow water).

3) TENNIS SHOES ARE TO BE WORN AT ALL TIMES. There may bottle tops and broken glass which can injury you. Many plants and animals are dangerous to step on.

4) DO NOT CLIMB TREES. A fall could mean injury to you and you might miss the rest of the program.

5) STAY WITHIN THE BOUNDRIES GIVEN YOU. When on the shore trip stay between the instructor and the shore. In the woods stay in line behind the instructor and in the middle of the open pathways.

6) REPORT ALL INJURIES OR ILLNESS. We have a First Aid station in the center and supplies on the field trips.

7) LEARN THE DANGEROUS PLANS AND ANIMALS OF THE AREA. Do not handle them.

NOTE: ANY STUDENT WHO DOES NOT FOLLOW THE SAFETY RULES OR THE FIELD OR LABORATORY PROCEDURES MAY BE REMOVED FROM ANY ACTIVITY BY THE CENTER INSTRUCTORS.

SOURCE: Environmental Education Center, Dade County Public Schools, Dade County, Florida

APPENDIX E

REQUIREMENTS FOR BUS COMPANY APPROVAL

Bus companies must comply with state and local laws and ordinances and must carry minimum limits of liability insurance, listed below, and workmen's compensation insurance.

For Bodily Injury: $100,000 per person and $300,000 per accident, or $5,000 multiplied by the rated seating capacity of the bus, whichever is higher.

For Property Damage: $50,000.

Medical Payments: $ 500.

Bus companies are responsible for proper insurance coverage and current certicicates of insurance must be submitted to the Purchasing Department, Room 608, 1410 N. E. 2nd Avenue, Miami, Fla. 33132

Certificates of: Liability Insurance submitted by ____________________

Name of Insurance Company ________________________

Workmen's Compensation Insurance submitted ______________

by Name of Insurance Company __________________________

Show number of buses covered by above insurance.

Purchase order will be issued to the bus company as authority for all trips.

Invoices must be submitted for each trip, to the Purchasing Department, Room 608 1410 N. E. 2nd Ave., Miami, Fla. 33132

Buses are requested to be prompt as scheduled.

Bus Companies without an appropriate certificate of insurance showing required coverages will not be permitted to be used to transport any school children.

APPENDIX E

LIST OF ELIGIBLE BUS COMPANIES AND TRIP RATES-TO VARIOUS POINTS OF INTEREST-PER BID 69-V-4 CHARTER BUS SERVICE

NAME OF BUS COMPANY	A-1 Bus Lines, Inc. Ph. 573-0550 MR. STORTI	A & M School Bus Service Ph. 279-4099 MRS. MINTZ	American Sightseeing Tours Ph. 633-0281 MR. WHITLOCK	Grayline Sightseeing Tours Ph. 944-4376 HARRIET MACHOW	Greyhound Lines East Ph. 377-0744 945-0801 N. Mia. Bch. MRS. BARRETT	1150 Ent., Inc. Johnson Bus Serv. Ph. 891-7790 PAT DAVIS	Metro Transit Authority Ph. 638-6117 MR. GRASSMAN	Vaughn Bus Company Ph. 621-7592 MR. VAUGHN	Williams School Bus Service Ph. 620-1533 MR. WILLIAMS
Number of Buses	20	22	80	32	10	3 only	397	4 only	1
Passenger Capacity per bus	52 pass.	20 to 66 pass.	53 pass.	38 pass. 49 pass.	58 pass.	66 pass.	51 pass. 53 pass.	72 pass.	
IN COUNTY TRIPS									
Air-Conditioned	-	0	-	-	-	-	17.00/hr	0	C
Non Air-Conditioned	-	-	-	-	-	-	15.00/hr	13.00/hr	13.00/hr
OUT OF COUNTY TRIPS	-	-	-	-	-	18.00/hr (4 hr. min.)	-	-	-
POINT OF INTEREST									
Rate per hour (Garage to Garage)	18.00/hr.	11.00/hr. (6 hr. min.)	18.00/hr. (5 hr. min.)	16.00/hr. (3 hr. min.)	100.00/5 hr. or less *15.00 additional hr.	16.50/hr. (4 hr. min.)	15.00/hr. (2 hr. min.)	65.00/5 hr. or less *2.50 ea. additional 15 min.	65.00/5 hr. or less

*Rates listed are quoted from "garage to garage"
Toll Charge - $1.50 each trip

**Out-of-county trips require special handling. Separate quotes for each itinerary must be secured in detail by the schools from at least three companies for time, availability and costs.

APPENDIX F

ASSURANCES AND RELEASE OF LIABILITY

I, ____,

assure The School Board of Dade County, Florida that I am duly licensed to operate the motor vehicle to be used by me to tow the trailer owned by the School Board, including the equipment, boats or canoes to be hauled on the trailer; that I am experienced in towing such a trailer; that the vehicle to be used by me is properly equipped for towing, including a permanent trailer hitch, rear-view mirrors, and brake lights; that the vehicle to be operated by me and used in towing is currently insured by an insurance policy in amounts required by law or in excess of such amounts; and that I do release The School Board of Dade County, Florida, its members, officers, agents and employees from any and all liability for injury to my person or damage to my vehicle occasioned by or resulting from my towing of the trailer, equipment, boats or canoes owned by the School Board of Dade County, Florida.

DATED this _______ day of ___________, A.D. 19__.

____
Signature

51

APPENDIX G

BUDGET PLANNING SHEET

RECEIPTS

School Projects __________

Student Assessments, 25 students @ ____ __________

Substance Abuse Account __________

Internal Account (Miscellaneous) __________

Number Free/Reduced Breakfasts ____
X 4 days __________

Number Free/Reduced Lunches ____
X 5 days __________

TOTAL RECEIPTS __________

EXPENDITURES

First Aid Supplies __________

Instructional Supplies
(lens, construction paper, film, etc.) __________

Substitute Teaching Time __________

Food Services __________

Additional Groceries __________

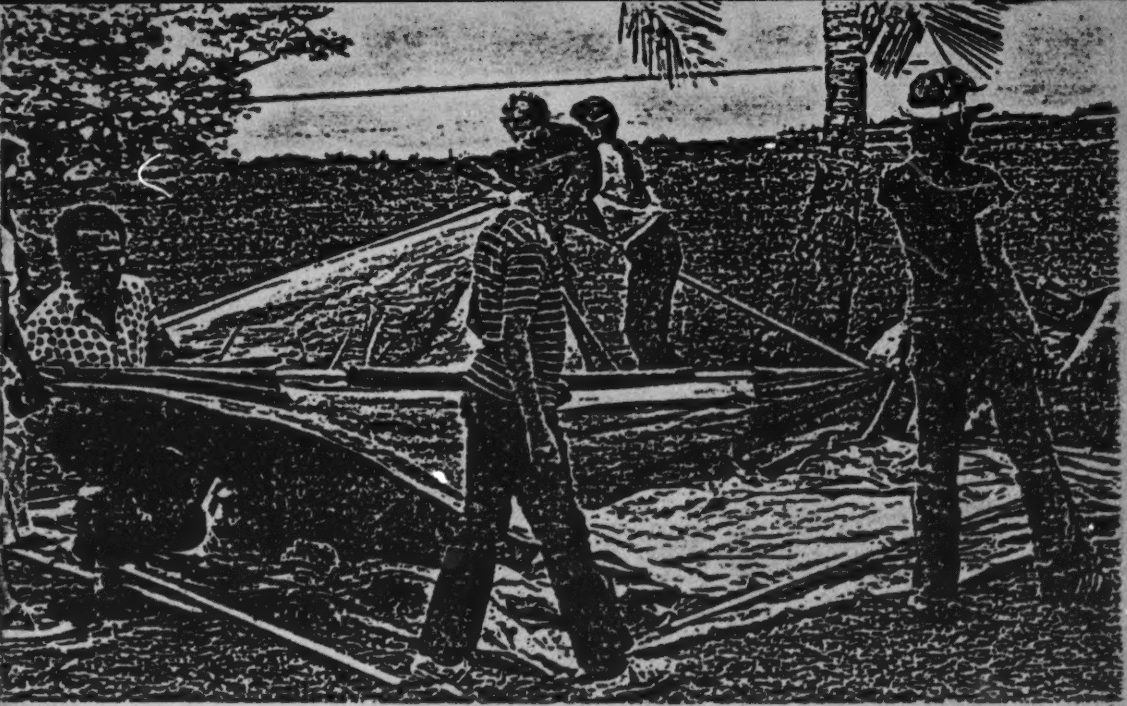
Entrance to Park
Bus __________
Trailer __________
___ Private Cars @ ____ per car __________

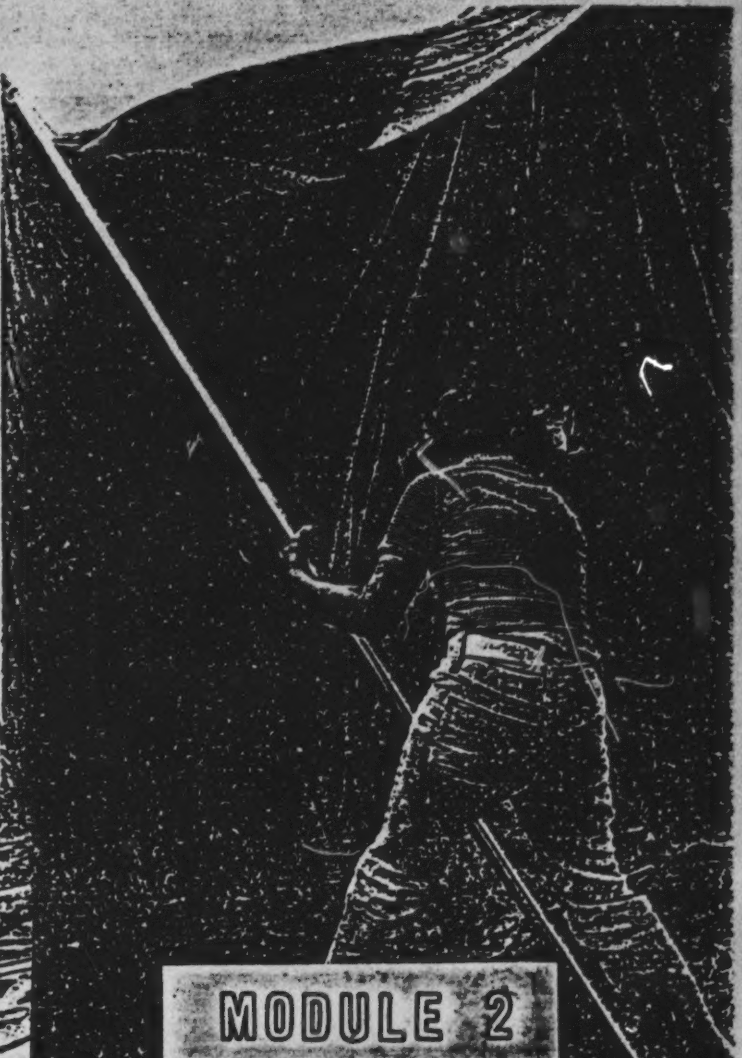
Daily Milk Supply
____@ ____ X No. of days ____ __________

Sunset Boat Trip __________

TOTAL EXPENDITURES __________

CARE OF EQUIPMENT





MODULE 2

MODULE II

Care Of Equipment

a module for teachers and students who want to know how to set up and take care of their camping equipment.

The Everglades Environmental Study Unit

The curriculum project was funded by a mini-grant from the Office of Education, Department of Education, Ralph D. Turlington, Commissioner

DADE COUNTY PUBLIC SCHOOLS
Miami, Florida

DADE COUNTY SCHOOL BOARD

Dr. Ben Sheppard, Chairman
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Dr. Linton J. Tyler

The Everglades Environmental Study Unit Project was developed by the North Central Area Curriculum Center in cooperation with Everglades National Park Rangers, teachers and administrators.

Dr. Jeff West, Area Superintendent
Mr. Herbert C. Bloom, Area Staff Director
Mrs. Harriet Ehrhard, Science Consultant

This is one of a series of four (4) modules developed for use by teachers who wish to take students on an extended camping trip in Everglades National Park. These modules provide needed information and resources that enable educators to better use the "outdoor classroom". Additionally, these modules provide resources for teachers to use in their classroom applying concepts of environmental education in seven curriculum areas.

Overview - "Everglades Environmental Study Unit"
A descriptive slide/tape presentation for use by administrators, teachers and parent groups.

Module I - "Ready, Set, Go"
A planning module for principals who want to know how to plan an Everglade Camping Experience for their students

Module II - "Care of Equipment"
A module for teachers and students who want to know how to set up and take care of their camping equipment.

Module III - "Safety in the Outdoor Classroom"
A guide on the rules, regulations, and safety procedures to be followed during the camping experience.

Module IV - "100 Environmental Resources For Teachers"
A guide to free or inexpensive resources to be used in the classroom or in the field.

These modules and slide/tape presentations are available for loan from the North Central Area Curriculum Center, 6221 Northwest 29th Avenue, Miami, Florida.

CARE
OF
EQUIPMENT . . . . a plan for helping the students to be comfortable and safe in a natural setting

RATIONALE

Many skills taught in the classroom are applied traditionally in the context of the printed word. There are some skills that need to be experienced in order that the individual fully comprehend their meaning and usefulness in his life. The Everglades Camping Experience, one of several possible study situations in the total environmental program, provides a unique opportunity for the learner to become aware of and practice behaviors that will enhance his life now and later. To maximize personal growth in an environment that contrasts so vividly with the school site, extensive, well-defined planning by the administrator is necessary.

It is also necessary that the learner be able to function comfortably in order to maximize his opportunity and not lose it through improper use and care of his life support system.

MAJOR GOAL OF MODULE

To provide a comprehensive planning and teaching instrument that will insure safety for students and staff, and provide guidelines for proper care and use of the equipment necessary to let the students and staff function without discomfort.

OBJECTIVES OF MODULE

This module will:

(1) provide an equipment checklist for the participants.

(2) provide pictorial and verbal instructions on the setting up, operating and care of the Everglades Camping Program equipment.

(3) provide the participants with essential safety information when using camping equipment.

CARE OF EQUIPMENT

RATIONALE 1

MAJOR GOAL OF MODULE 1

OBJECTIVES OF MODULE 1

Equipment Checklist 2

Tents - Set up and Care 3-10

Canopies - Set up and Care 11-12

Lighting Gear - Set up, Operation and Care 13-16

Cooking Gear - Set up, Operation and Care 17-32

APPENDIX 33

EQUIPMENT CHECKLIST

The following equipment is contained in the Trailer:

_____ 2 Igloo Ice Chests

_____ 1 Igloo Water Cooler

_____ 2 Coleman Two Burner Propane Camp Stoves

_____ 2 Coleman Double Mantle Propane Lanterns

_____ 4 Benz-O-Matic Refillable Propane Fuel Cylinders

_____ 1 Adapter for Refilling Refillable Tanks

_____ 2 47.7 lb Refillable Propane Cylinders

_____ 1 Vulcun-Hart Grill with Stand, Wind Screen, Hoses, Adapters and Regulator

_____ 1 Dining Canopy

_____ 6 Coleman Oasis Tents with Poles and Pegs

_____ 6 14-quart Metal Buckets

EQUIPMENT CHECKLIST

The following equipment is found with the Canoe Trailer:

_____ 4 17-foot Grummun Canoes

_____ 12 Paddles

_____ 12 Large Life Jackets

_____ 8 Small Life Jackets

TENTS

Site Selection

(1) Good water should be nearby.

(2) Pitch camp as far away as possible from roads and general traffic.

(3) Shade is best to have on the south and west to cut afternoon sun.

(4) Choose a flat area. It's more comfortable if you're not sleeping on a slope.

(5) Stay "high and dry". Campsites on knolls and hilltops are warmer at night and provide natural drain-off in case of rainfall.

(6) Clear site of sticks and sharp objects.

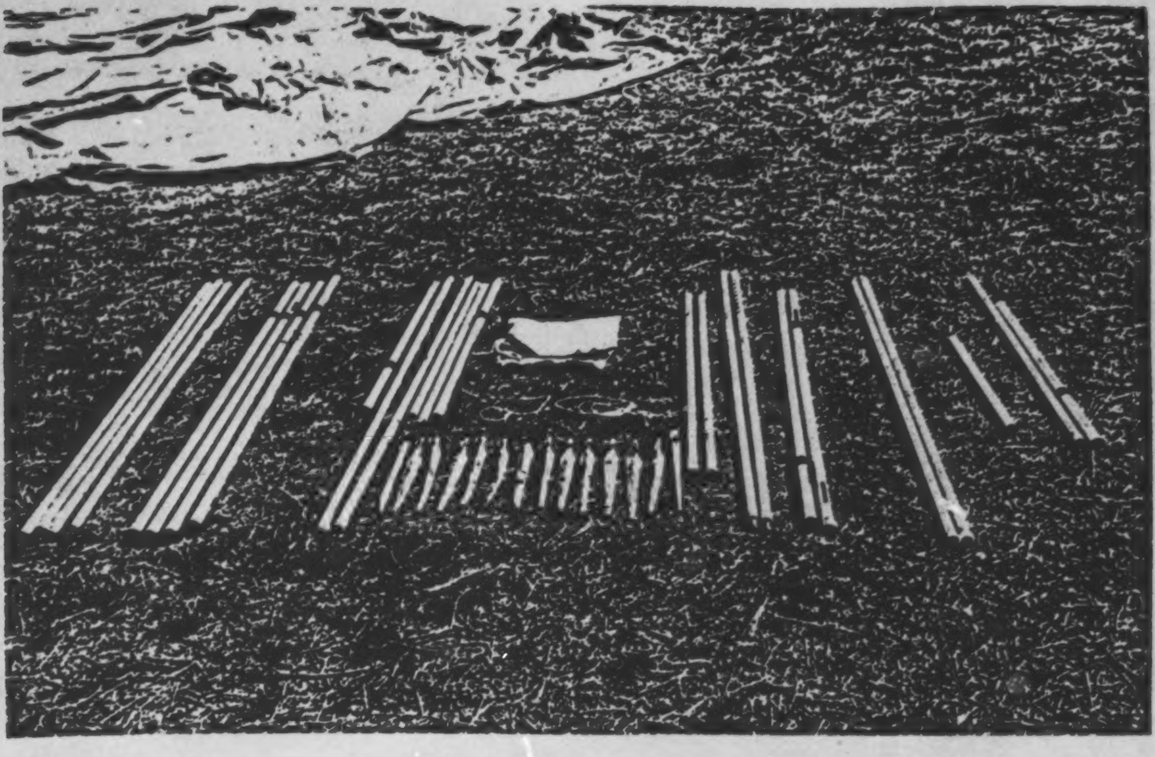
(7) Never set up camp near trees with large, dead branches that may blow down on you or your equipment.

(8) In cool weather, face your tent door away from prevailing winds to keep tent warmer and drier inside. In hot weather, do just the opposite.

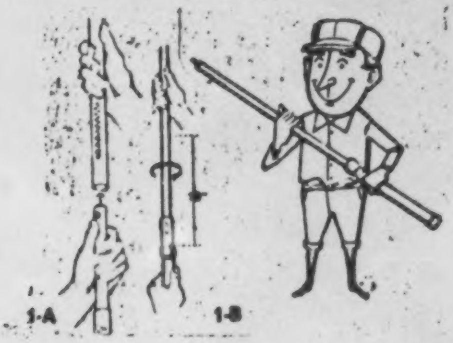
(9) A breezy campsite is more likely to be free of bugs.

(10) Plan your campsite to give yourself room for cooking, eating and sleeping. Pitch your tent well away from the campfire area and always upwind from the fire.

Setting Up The Tent



The aluminum tubing will assemble into a ridge pole, two eave poles, four brace poles and two upright poles. They are color coded (yellow tips to yellow tips, blue tips to blue tips and black and red caps against the ground) and named to make it easy to place the correct units together. Segregate the poles to their respective positions as shown in the photograph above.

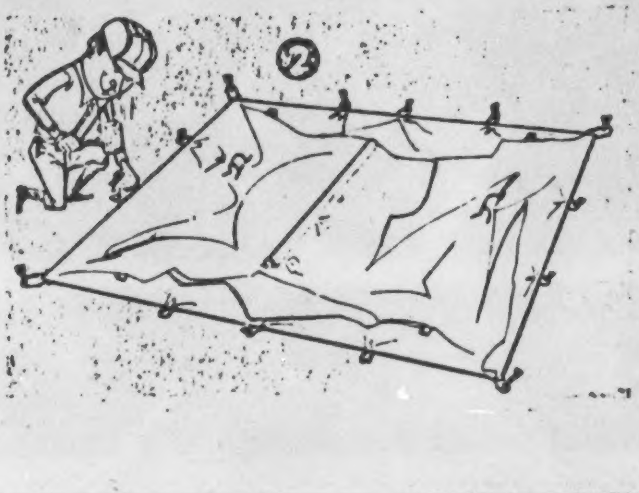


Assemble the two upright poles with the two pieces marked foot by depressing the button on the foot and sliding it in against the spring in the upright until the button snaps into the slot (see illustration 1-A). Slide the upright pole with the nine slots into the upright pole with the black nylon lock sleeve, being sure that the slots are visible through the long slot above the lock sleeve. You adjust their length by twisting the two sections of tubing (to remove the lock or key from the slot) and moving to desired length. To lock again, align slots with lock sleeve and allow lock to snap back into new slot (see illustration 1-B).

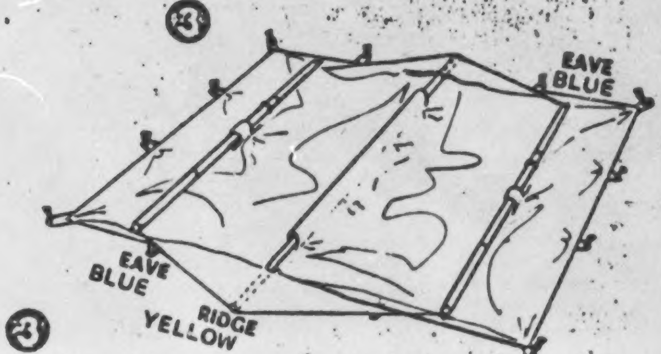
CAUTION: Support upper pole section when releasing lock and release tension from upper pole gradually.

Lay out the tent so that it will face in the direction you want it to. Stake out the four corners first, using the 12" Hook Stakes, being sure the tent is squared and tight in all directions. Drive in remaining stakes.

NOTE: Zip screen and threshold zippers closed to insure proper pole fit.



Smooth out top of tent. Assemble the eave and ridge poles as shown in illustration 1. (The number of pieces for ridge poles will vary according to size of tent.) Insert blue colored tips of eave poles through loop then hook L shaped ends into grommets at both ends of tent. Adjust to proper length (illustration 1-B) with just enough tension to keep tent taut. Insert yellow cap ends of ridge pole through sleeve and into pockets on canopies. Be sure that holes in ridge pole face downward after adjusting.



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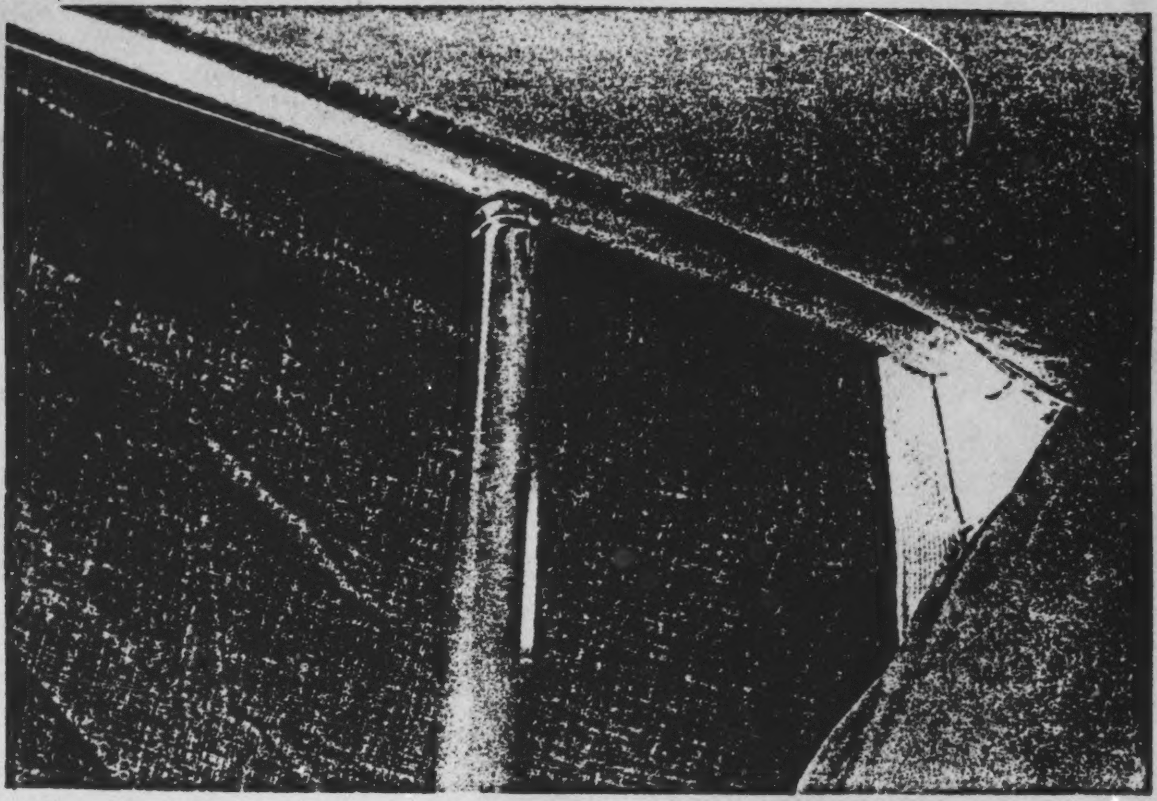
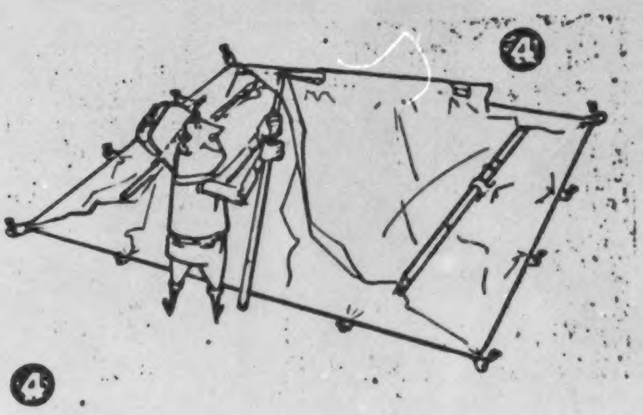
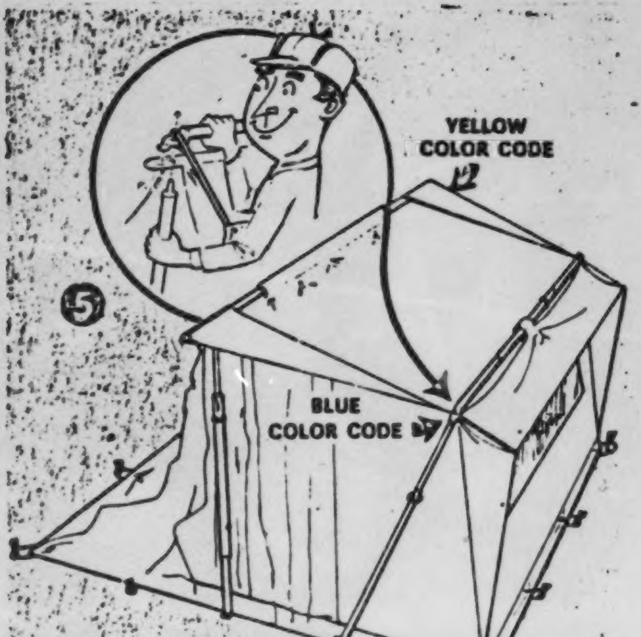




Insert the two upright poles (yellow tips) into the holes in underside of the ridge pole. Raise center of the tent to its approximate location.



Loop awning shock cord over end of eave pole (see insert illustration 5). Insert the blue tips of the brace poles through the grommets at the corners of the tent and on through the holes in the blue ends of the eave poles.

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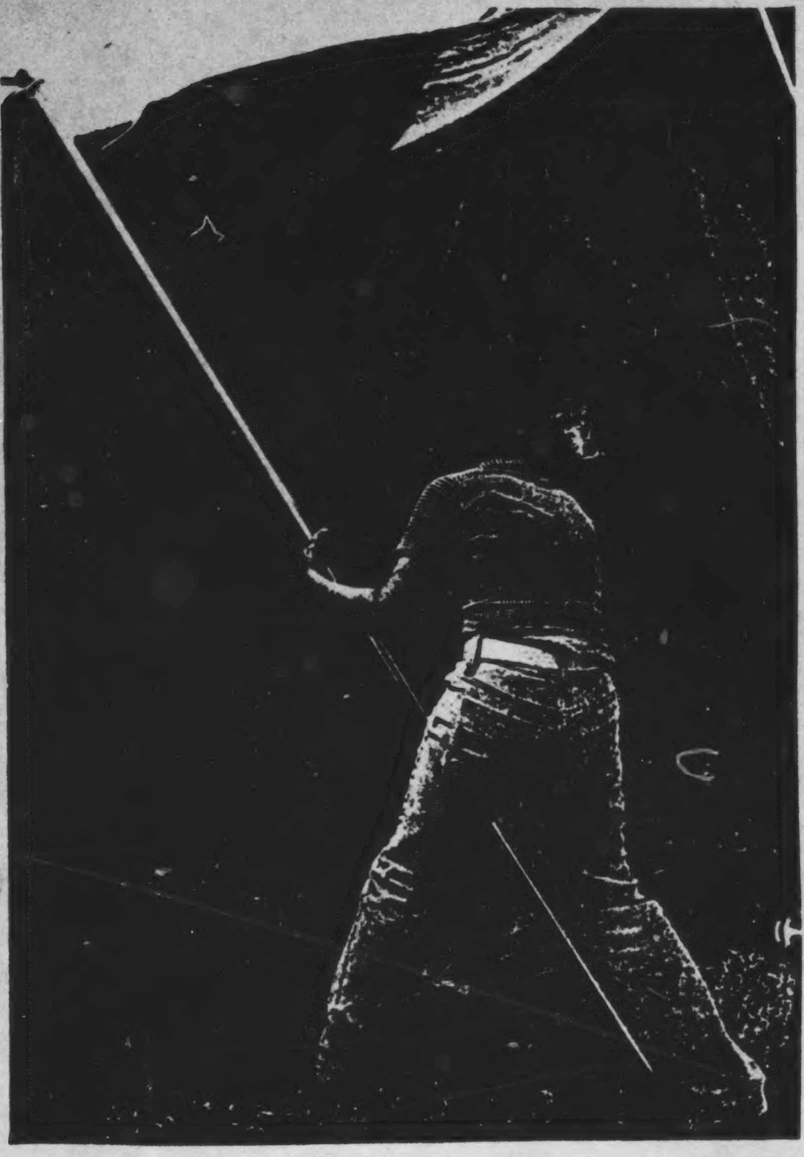
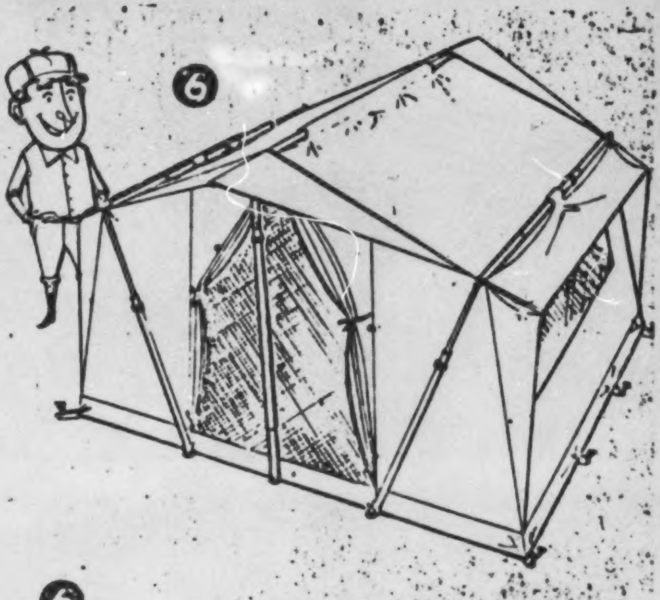


Adjust brace poles to approximate lengths with the bottoms of the brace poles located in the intermediate tent stake loops.

Slide wooden dowels into pockets at corners of awnings. The upright and brace poles should then be adjusted until the tent stands firm and trim!!



⑥

Care of Tent

It is wise not to rub the inside of the canvas or have anything touching it during a rainstorm since this may break the surface tension enough to allow a small leak. It also is very unwise to spray insect repellents in such a way that the liquid spray impinges on the tent, since many of these sprays tend to diminish the water resistance of the canvas. Allowances are made when your tent is cut for the normal shrinkage which will take place the first time or two the tent is subjected to a hard rainstorm. This shrinkage may even amount to as much as an inch per foot.

While the flooring material is extremely durable it is advisable to use cardboard under tables and chairs to avoid punching holes in the flooring.

Never store your tent even for a short time without drying it thoroughly and brushing off caked dirt. Tents are treated for mildew resistance, but any canvas will be attacked if stored damp.

Stakes should be pulled with a stick or another stake, never by pulling on the canvas. And neither stakes nor poles should be packed inside your tent for fear of damage to the canvas.

TENT POLES SHOULD NOT BE LEFT TELESCOPED TOGETHER DURING STORAGE!!!!

WARNING

KEEP ALL FLAME AND HEAT SOURCES AWAY FROM TENT FABRIC

These tents are made with flame resistant fabric which meets CPAI-84 specifications. IT IS NOT FIREPROOF.

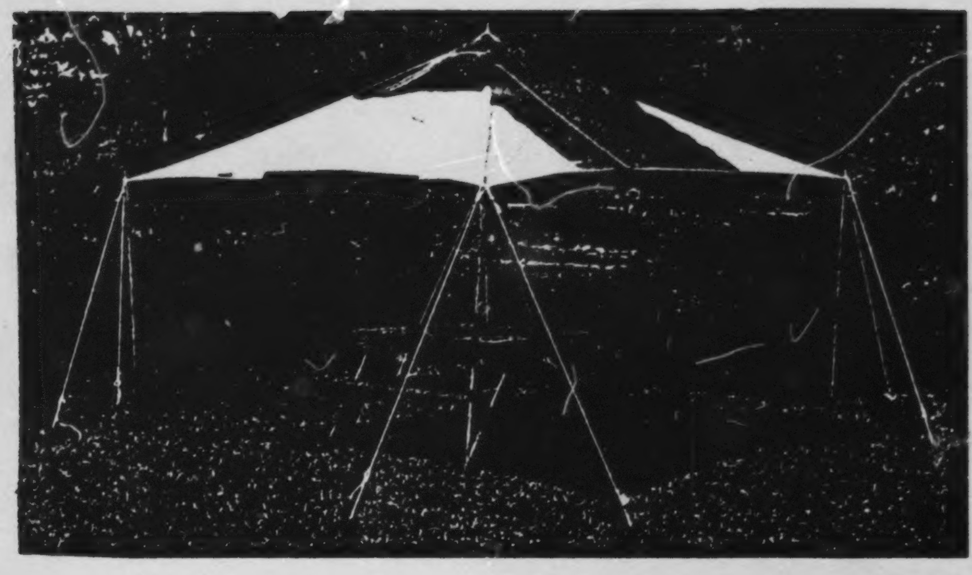
The fabric will burn if left in continuous contact with any flame source.

The application of any foreign substance to the tent fabric may render the flame resistant properties ineffective.

Keep burning appliances and campfires a safe distance from tent materials.

Do not operate burning appliances, light matches, or handle any flame source in or near tent.

CANOPY



Purpose and Care

The canopy or fly, as it is sometimes called, provides protection from rain or sunshine. It is canvas and should be treated the same as the tents. It is most often used over the food preparation area and/or cooking site.

Setting Up

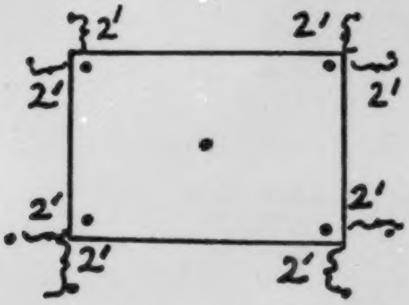
The complete canopy set consists of the canvas canopy, eight guy ropes, eight stakes, one adjustable center pole and four corner poles. It should be erected before any stoves or tables are placed.

(1) Place the canvas on the ground and straighten into a square as nearly as possible.

(2) Fasten two guy ropes to each corner.

(3) Drive two stakes at each corner approximately 2 feet from the corner (see illustration 1).

(4) Fasten the guy ropes to the stakes leaving approximately 6 feet of guy rope loose.

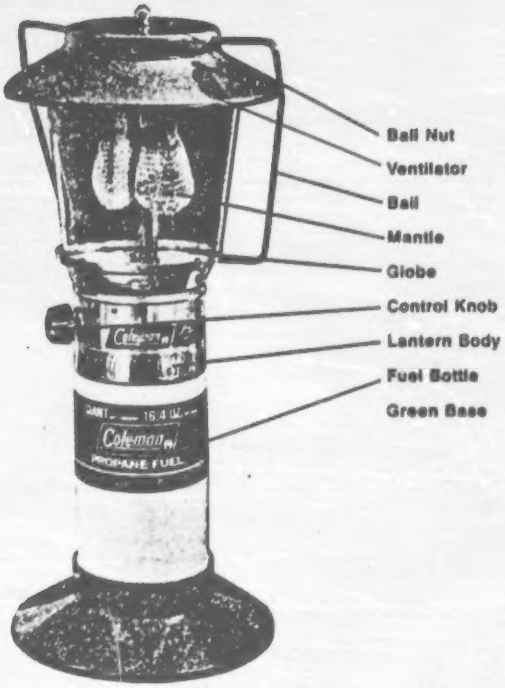


(5) Place the center pole in the middle grommet and raise it to approximately 7 feet.

(6) Place the corner poles in the corner grommets and raise until perpendicular to the ground.

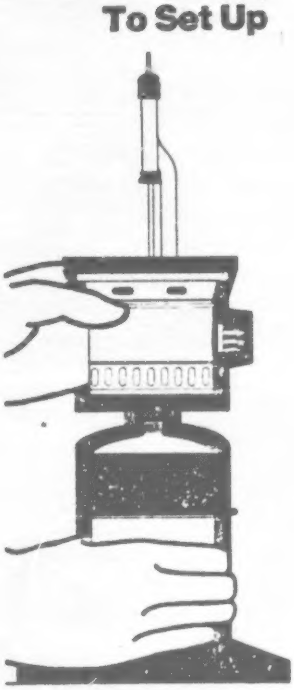
(7) Tighten the guy ropes and center, adjustable pole until the canvas is taut.

LIGHTING GEAR



PROPANE LANTERN

Setting Up



INSTRUCTIONS
ON
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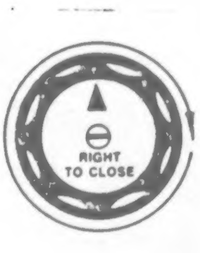
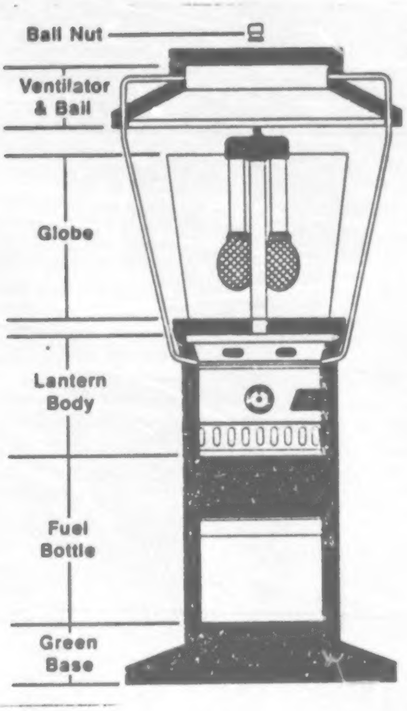




Instructions for Propane Lantern

(1) Remove lantern green base and fuel bottle from carton.

(2) Remove globe from lantern.

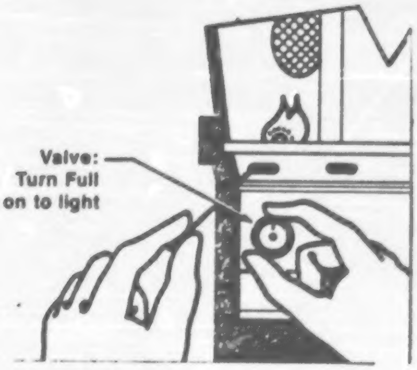
(3) Place bottle securely in green base.

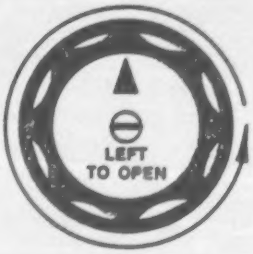
(4) Make sure control knob is turned off (ALL THE WAY TO THE RIGHT).

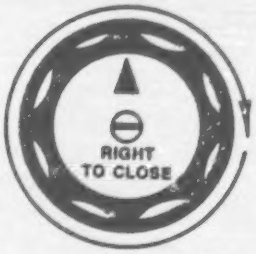
(5) Remove protective cap from top of fuel bottle.

(6) Screw fuel bottle into lantern fitting by turning to right. Take care not to cross thread. Tighten firmly by hand. Do not use wrench or pliers.

Lighting







TO LIGHT

1. Push lighted match through lighting hole; hold near mantles and turn control knob ALL THE WAY TO THE LEFT. Lantern will light instantly when air and gas mixture reaches mantles. NOTE: If match goes out before mantles light, turn control knob off and allow a few seconds for gas to dissipate before repeating this step.

2. Adjust light with control knob.

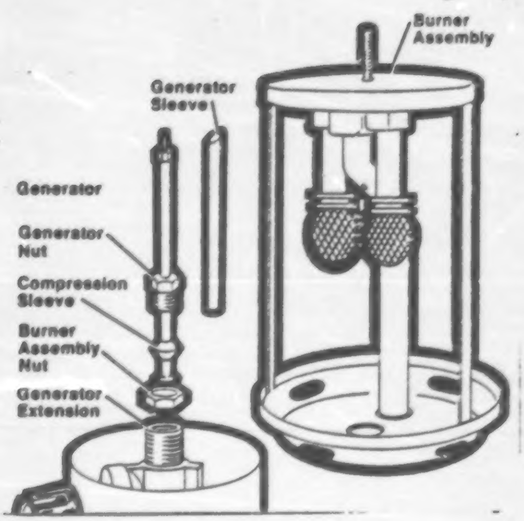
TO TURN OFF

1. Turn control knob all the way to the right.

Care

TO TIE ON MANTLES

1. Tie mantles around groove in burner cap. Distribute folds of mantles evenly. Cut off surplus string.
2. Light bottom of mantles evenly. Burn until nothing but white ash remains.
3. Place globe on lantern body.
4. Place ventilator and bail on top of lantern and secure by tightening bail nut.



TO REPLACE GENERATOR

1. Remove bail nut, ventilator and bail, and globe.
2. Loosen generator nut at base of generator 1/4 turn. Then unscrew burner assembly nut.
3. Lift off burner assembly and lay aside.
4. Slip off generator sleeve and lay aside.
5. Unscrew generator nut and remove old generator. (Note: If generator extension turns, hold with pliers. Take care not to damage threads.)
6. Slip new compression sleeve on bottom of new generator.
7. Place generator in generator extension, slide generator nut over generator and tighten. Be certain generator extension is tight.
8. Slide generator shield over new generator.
9. Start the burner assembly over the generator. Then place the BURNER ASSEMBLY NUT over the generator and guide the generator tip into the hole in burner assembly. Position the burner tube in the hole in the frame bottom and tighten nut.
10. Reassemble globe, ventilator and bail, and bail nut.

To Store

(1) If lantern will not be used for a long period of time, disconnect propane bottle from lantern.

(2) Remove green base from propane bottle and place on bottom of lantern body.

(3) Store in safe clean place away from any heat source.

Warning

THIS APPLIANCE CONSUMES OXYGEN. PROVIDE AMPLE VENTILATION UTILIZING AT LEAST TWO OPENINGS, PREFERABLY ONE HIGH AND ONE LOW ON OPPOSITE WALLS.

PROVIDE ADDITIONAL VENTILATION FOR ANY ADDITIONAL FUEL BURNING APPLIANCES.

Cautions

(1) Do not place or store propane fuel bottles near flame, other sources of ignition or where temperatures may exceed 130°.

(2) Never allow tent walls or ceilings, sleeping bags, clothing or other combustible materials to come within 2 feet of the top of the lantern and 1 foot on all sides of the lantern.

(3) Always use propane lantern in upright position.

(4) Do not use a mantle with a hole. This can cause lantern parts to overheat and produce a hazard.

(5) Do not remove propane bottle from lantern while lantern is lighted or near open flame, other heat sources or lantern is hot to touch.

(6) Non-refillable bottles are dangerous if refilled. Refillable bottles should be refilled only by authorized propane dealers.

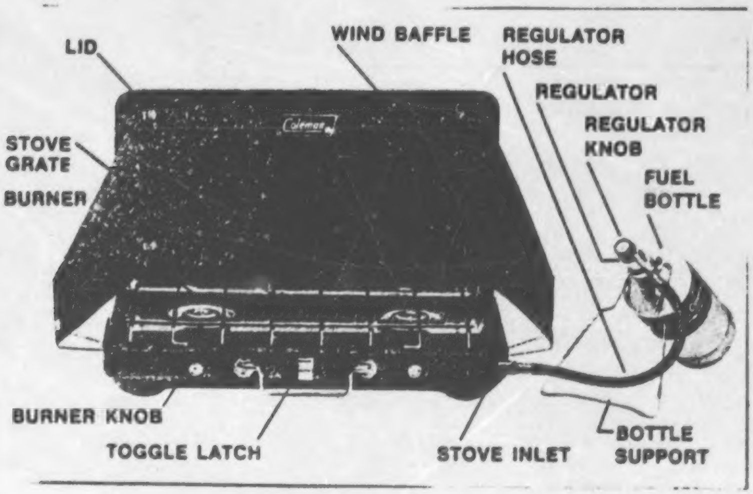
(7) Keep all joints and fittings clean and dirt-free.

(8) Leaking propane will accumulate in low places AND IS DANGEROUS. If lantern is accidentally turned on, turn off and ventilate area thoroughly.

(9) Check for leaks with soapy water or other leak detector. DO NOT USE FLAME.

COOKING GEAR

SMALL PROPANE CAMPSTOVE



Setting Up

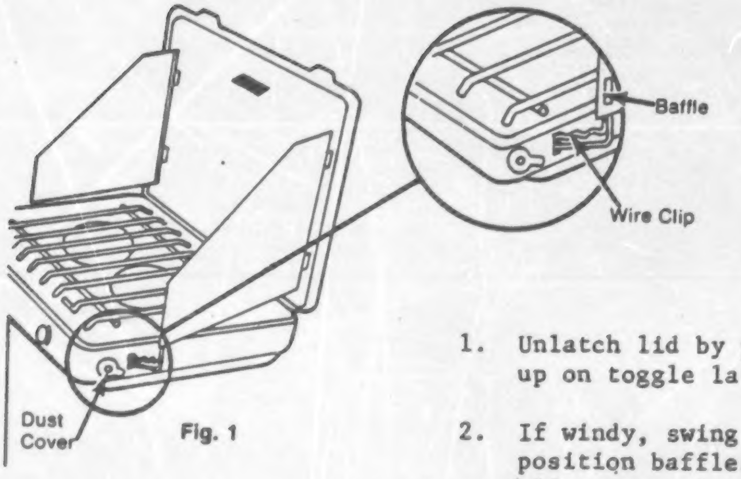


Fig. 1

1. Unlatch lid by pulling forward and up on toggle latch. Open lid.
2. If windy, swing wind baffles out and position baffles by inserting wire clips into slots at each end of stove.
3. Close both burner knobs on front of stove by turning firmly to right.
4. Remove fuel bottle, regulator, with hose, and bottle support from carton.
5. Close red regulator knob by turning firmly to right.

USING SMALL BOTTLES

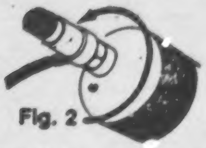


Fig. 2

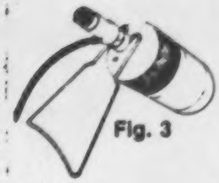


Fig. 3

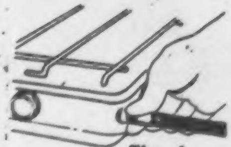


Fig. 4

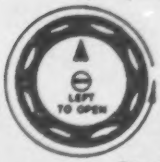


Fig. 5

1. Remove protector cap from top of fuel bottle.
2. Screw fuel bottle into regulator by turning to right. Take care not to crossthread. (Figure 2)
3. Snap bottle support onto neck of fuel bottle below regulator. Lean bottle onto bottle support. (Figure 3)
4. Unplug dust cover from stove inlet. Push regulator hose into stove inlet and tighten coupling to right. (Figure 4)
5. Tighten all connections firmly by hand. Do not use wrench or pliers.
6. Turn red regulator knob all the way to left. (Figure 5)
7. Periodically check all connections and hoses for leaks using soapy water. NEVER USE A FLAME TO CHECK FOR LEAKS.

USING LARGE REFILLABLE BOTTLES

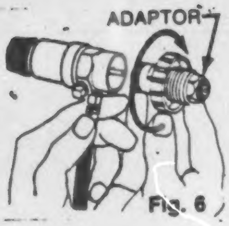


Fig. 6

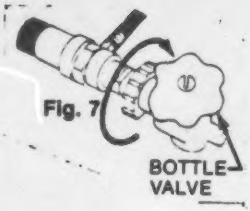


Fig. 7

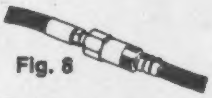
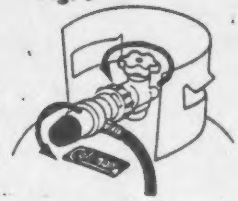


Fig. 8

Fig. 9



1. Make sure valve outlet on bottle is clean.
2. Screw adapter into regulator by pushing in on hand wheel and turning to right. (Figure 6)
3. Screw adapter into bottle valve by pushing hand wheel forward and turning to LEFT. (Figure 7)
4. Push regulator hose into extension hose and tighten coupling to right. (Figure 8)
5. Unplug dust cover from stove inlet. Push hose into stove inlet and tighten coupling to right. (Figure 4)
6. Tighten all connections firmly by hand. Do not use wrench or pliers.
7. Open bottle valve at least one full turn left. Turn red regulator knob all the way to left.
8. Periodically check all connections and hoses for leaks using soapy water. NEVER USE A FLAME TO CHECK FOR LEAKS.

Using

LIGHTING

1. Be sure red regulator knob is turned all the way to left.

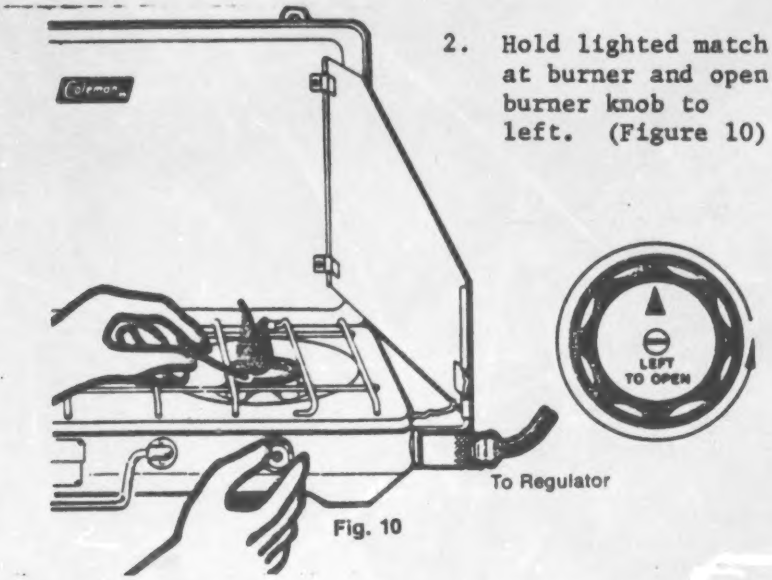


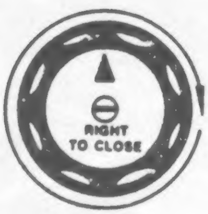
Fig. 10

2. Hold lighted match at burner and open burner knob to left. (Figure 10)

3. Adjust flame with burner knob.

4. To light second burner, repeat step 2.

TURN OFF



1. To turn off either burner, close burner knob by turning firmly to right.

2. When finished cooking, close red regulator knob by turning firmly to right.

Care

TO PACK OR STORE SMALL BOTTLES

1. ALWAYS disconnect fuel bottle from regulator.
2. Remove hose from stove inlet and replace dust cover.
3. Store regulator with hose under stove grate or in safe, clean place.
4. Remove bottle support and store under stove grate.
5. Fold in wind baffles, close lid and latch.

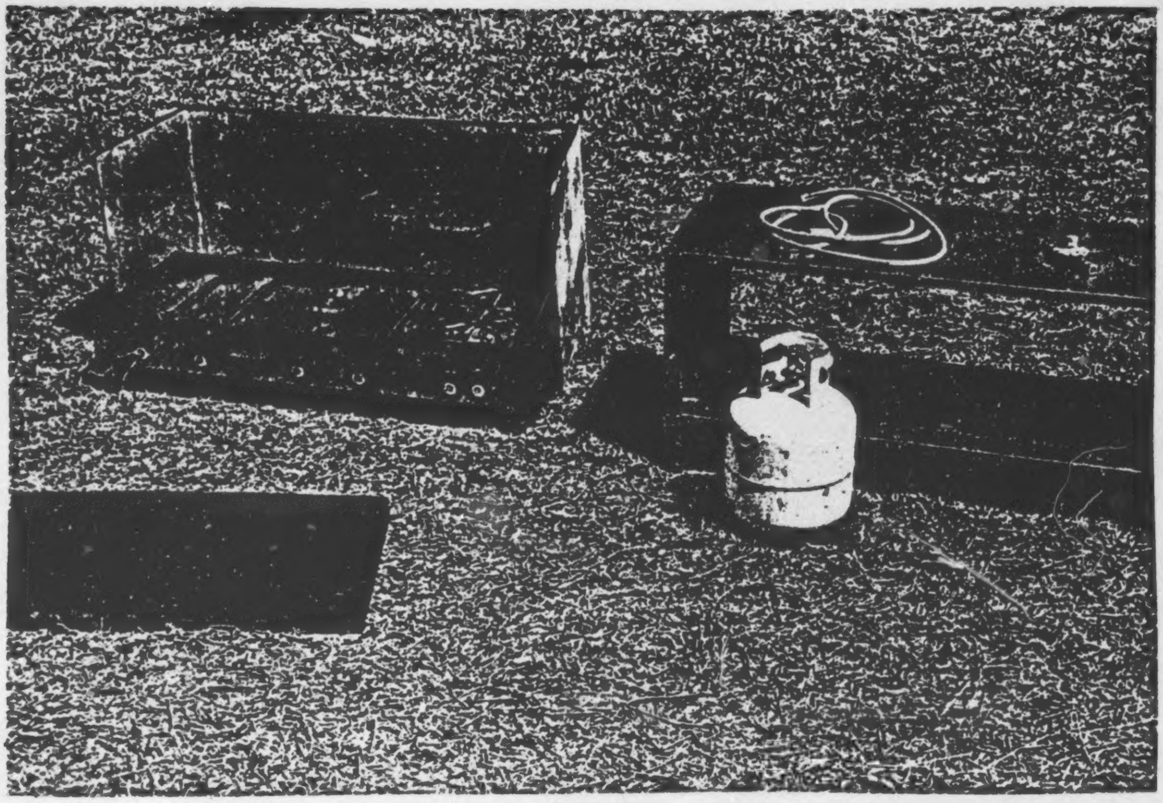
TO PACK OR STORE LARGE BOTTLES

1. ALWAYS close bottle valve by turning firmly to right.
2. Remove adapter from bottle valve by turning hand wheel to RIGHT.
3. Remove hose from stove inlet and replace dust cover.
4. Store regulator, hose, and adapter in safe, clean place.
5. Fold in wind baffles, close lid and latch.

WARNING

1. READ THESE INSTRUCTIONS THOROUGHLY.
2. Do not place or store propane fuel bottles near flame, other sources of ignition or where temperatures may exceed 130° F.
3. Do not use stove in tightly closed area. Any combustion process consumes oxygen. Make sure you have 20 square inches of opening to provide proper ventilation for this stove.
4. ADDITIONAL VENTILATION MUST BE PROVIDED FOR PERSONS AND OTHER FUEL BURNING APPLIANCES OCCUPYING AN ENCLOSED AREA.
5. Never allow tent walls or ceilings, sleeping bags, clothing or other combustible materials to come within 3 feet of the top of the cooking surface and 1 foot on all sides of the stove.
6. Always use propane bottle in upright position.
7. Non-refillable bottles are dangerous if refilled. Refillable bottles should be refilled only by authorized propane dealers.
8. Before each use, check all rubber hoses to make sure they are not cracked or cut. Keep rubber hoses away from flame and sharp objects.
9. Keep all joints and fittings clean and dirt-free.
10. Leaking propane will accumulate in low places AND IS DANGEROUS. If stove is accidentally turned on, turn off and ventilate area thoroughly.

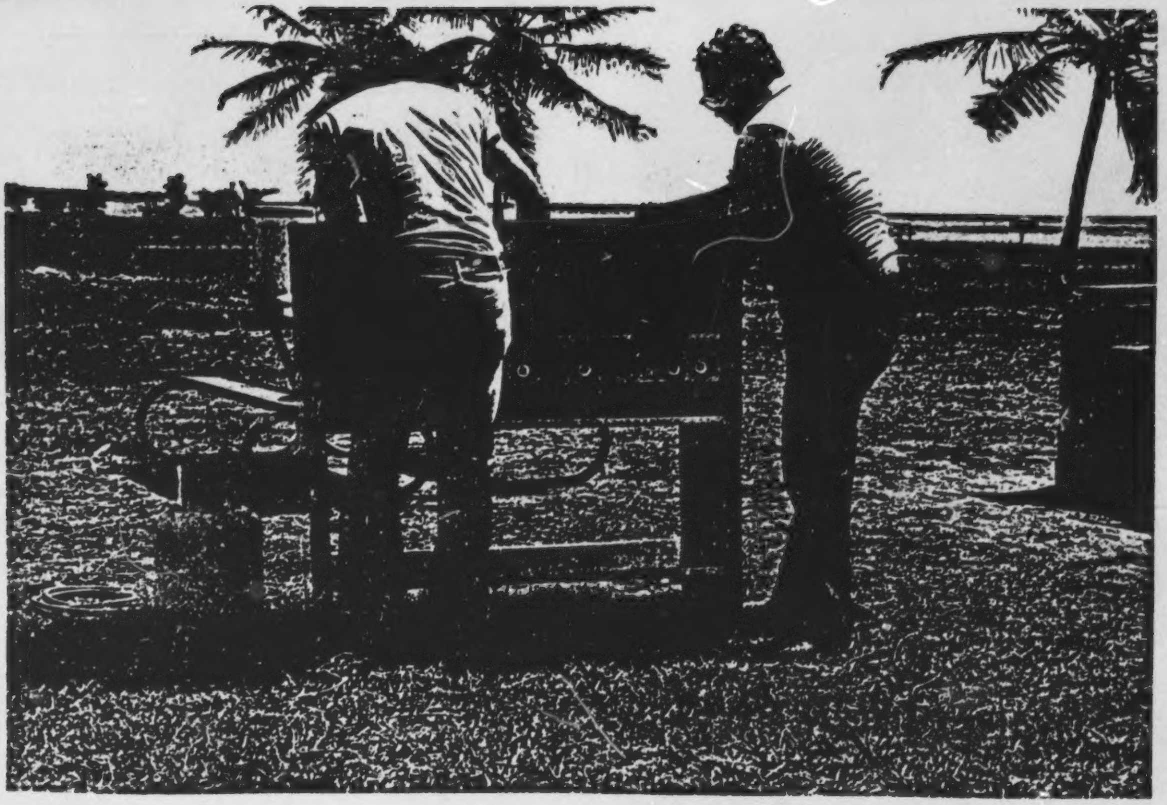
LARGE PROPANE CAMPSTOVE WITH GRIDDLE



The large stove set consists of:

metal stand
metal wind screen
stove with two burners and large griddle
large refillable propane tank
pressure regulator
rubber gas hose
six burner regulator knobs

Setting Up

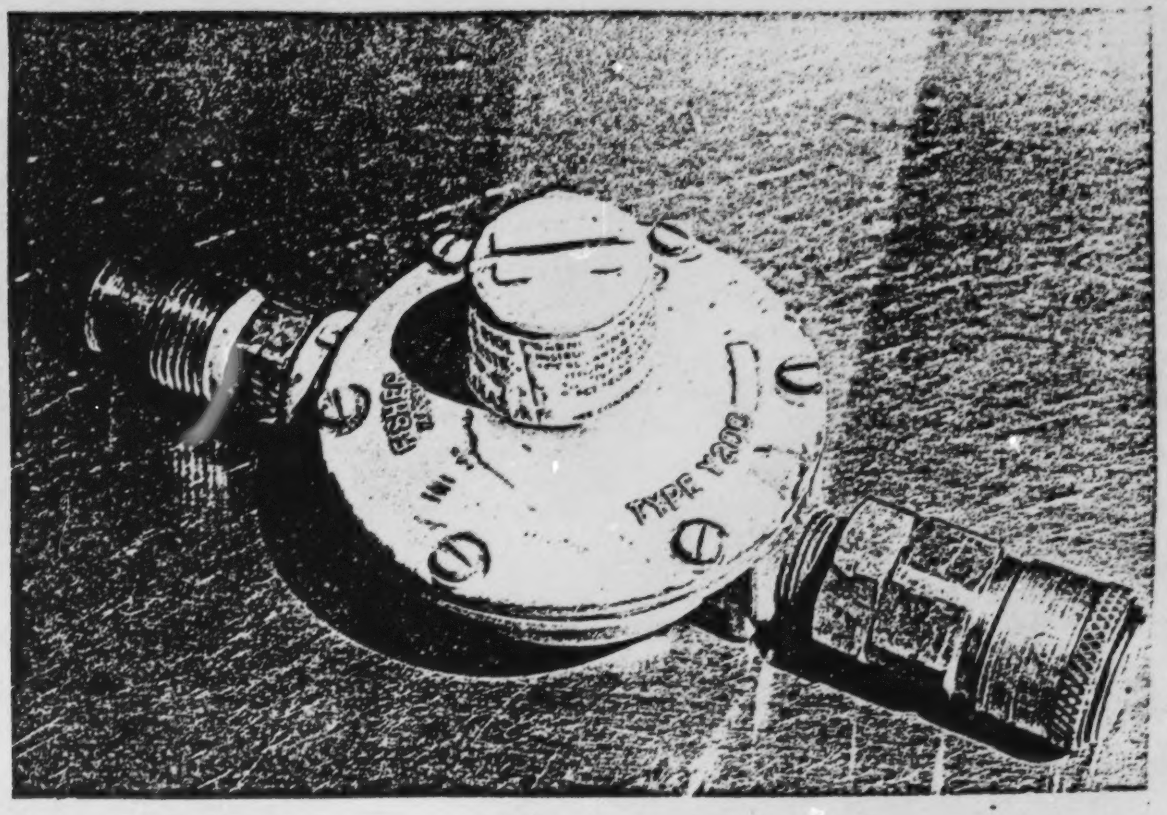


1. Attach the wind screen to the stove after it has been placed on top of the metal stand.

2. Attach the burner regulator knobs on the burner regulator rods by pushing firmly. When they have been put on, rotate counterclockwise to the left until they stop. DO NOT FORCE AGAINST THE STOP.

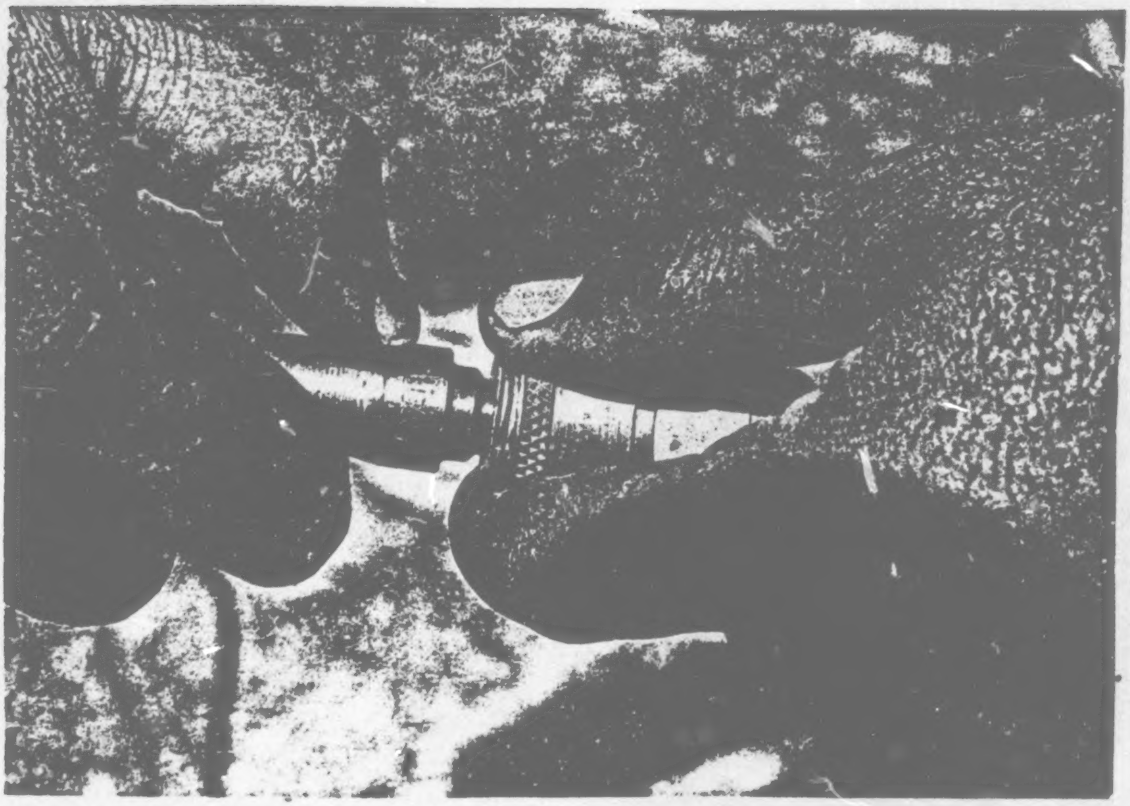
3. Place the large metal griddle over the strip burners.

4. When completed the stove should be free standing, rattle free, and as level as possible. It may be necessary to put shims under the legs in order to level on rough ground.



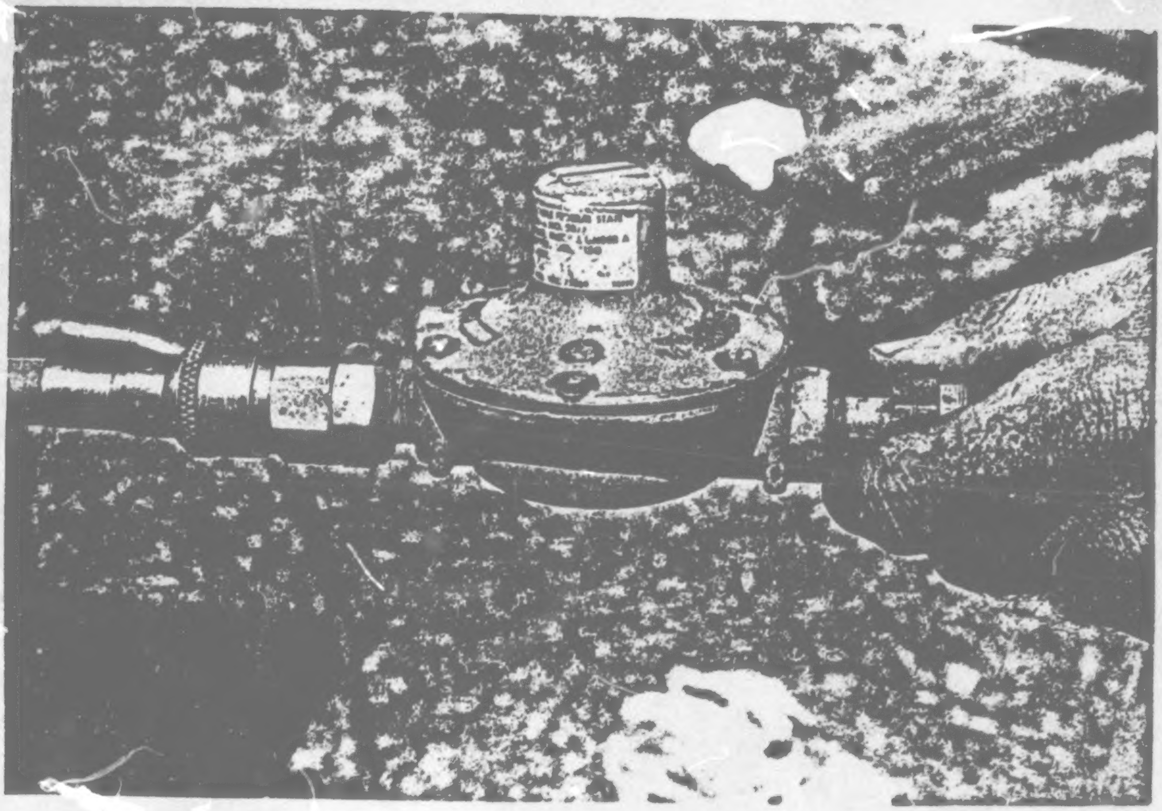
5. The end of the pressure regulator with threads will be fastened to the propane tank valve.

6. The end with a freely moving, spring loaded, retractable metal ring will be fastened to the rubber gas hose.

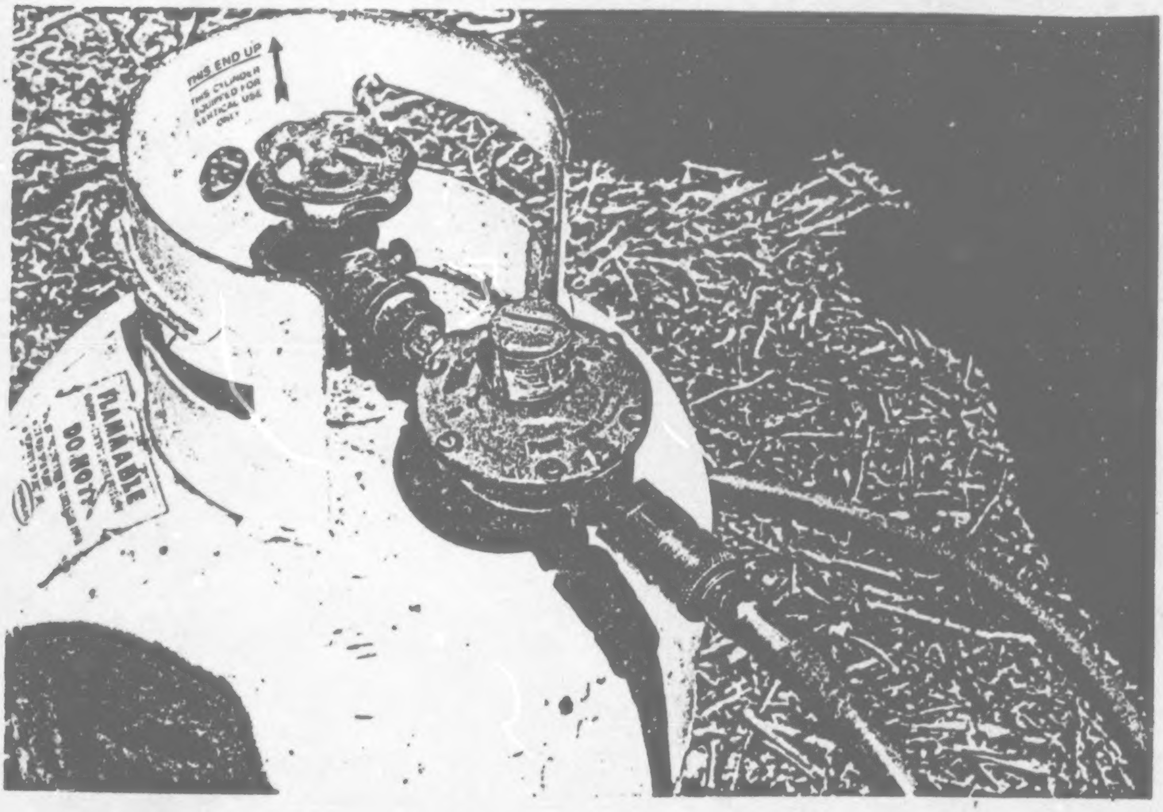


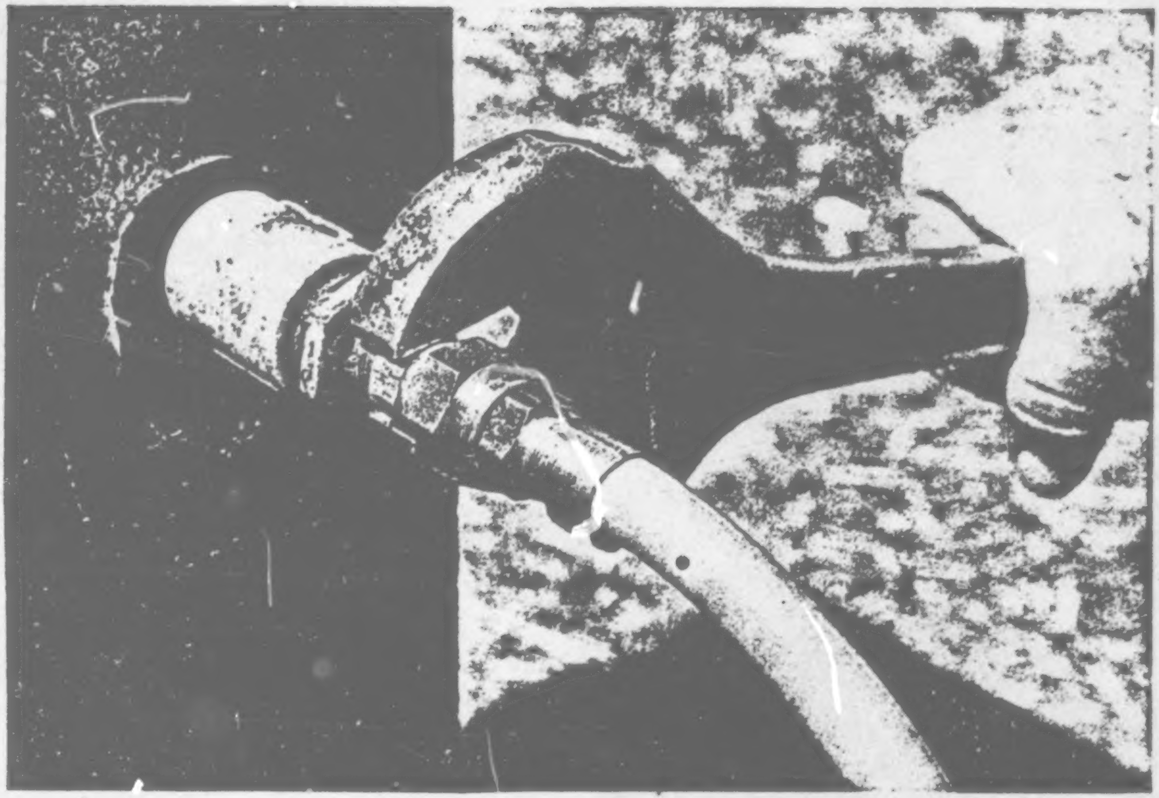
7. Take the pressure regulator in the palm of your left hand and pull back the retractable metal ring with your fingers.

8. Push the small, non-threaded end of the gas hose into the opening and allow the retractable ring to slide back into place and hold the hose securely in place.



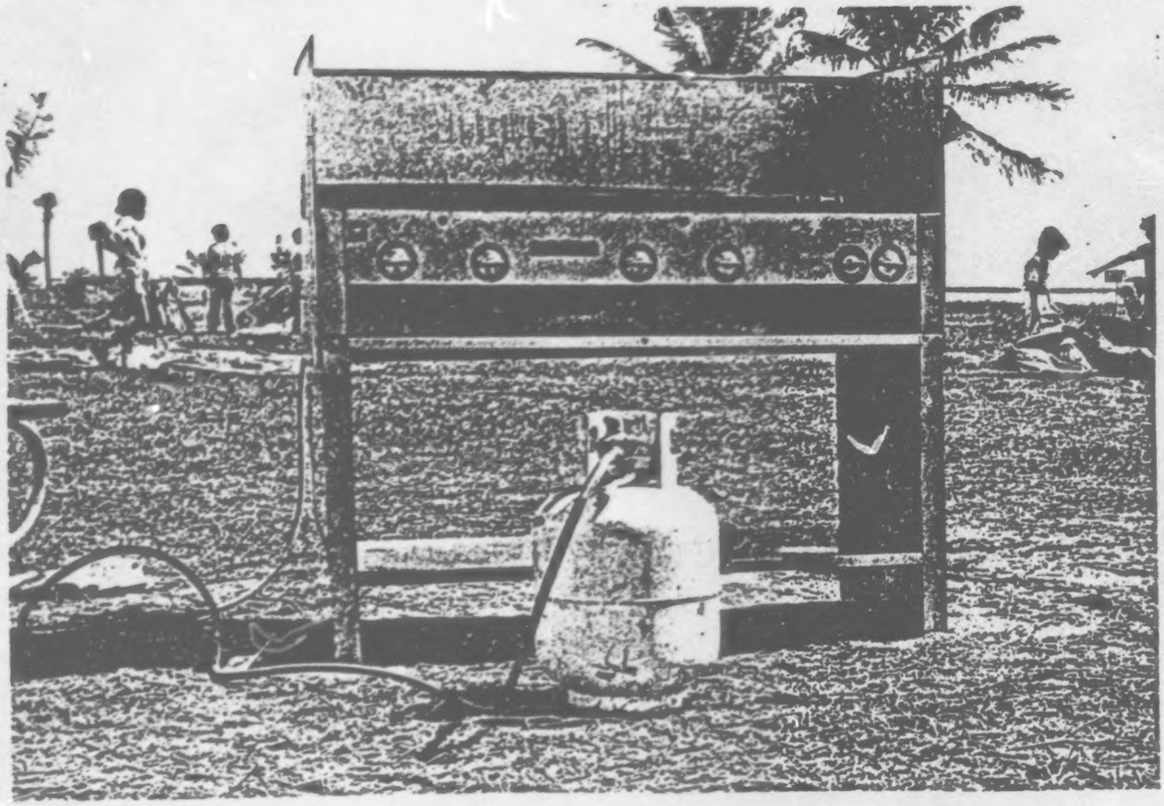
9. Place the threaded end of the pressure regulator into the tank valve and tighten in a counterclockwise direction with a wrench.





10. Fasten the gas hose to the stove by attaching the threaded end of the hose from the propane tank to the gas inlet pipe. (This pipe protrudes through the windscreen.)

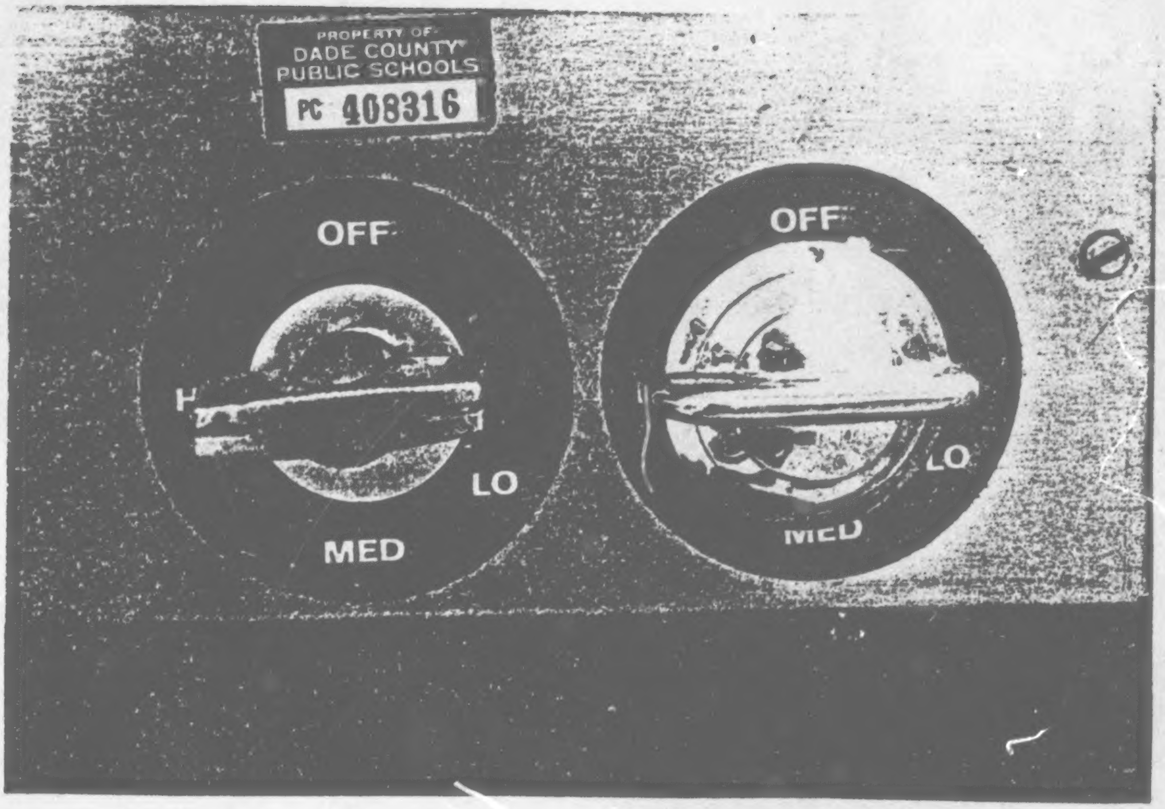
11. Turn in a clockwise direction and tighten with a wrench.



12. Turn on the gas by opening the bottle valve.

13. Check the connections with liquid soap or soapy water.

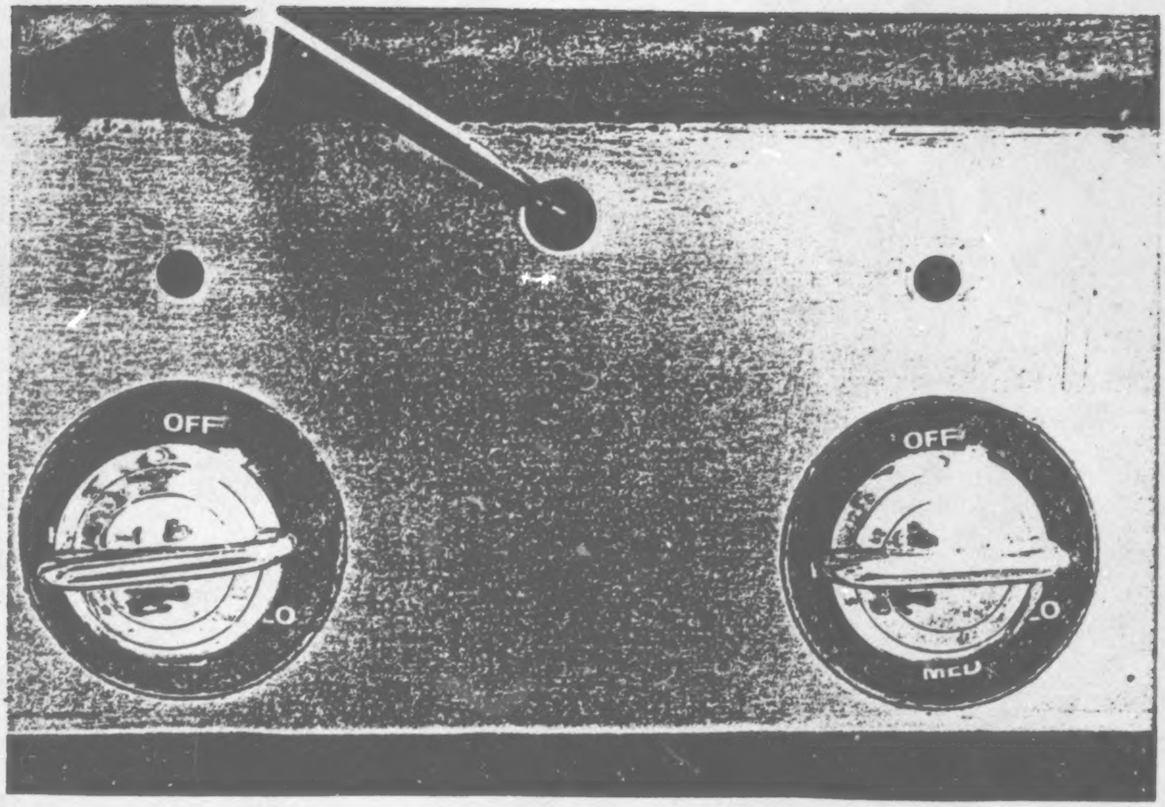
Lighting



1. The two burner valves on the right of the stove, when facing it, control the two top burners. They are close together.

2. Light a match and hold it close over the appropriate burner before turning the burner valve in a clockwise direction.

3. The degree of burner heat wanted is indicated on the valve.



4. The strip burners under the griddle are lit by inserting a wooden match or a rolled piece of paper through the indicated opening between the sets of burner valves.

5. The degree of heat on the griddle may be regulated by using 1, 2, 3, or 4 of the strip burners.

6. If only one burner is used it will be hot in one area only.

WARNING

1. READ THESE INSTRUCTIONS THOROUGHLY.
2. Do not place or store propane fuel bottles near flame, other sources of ignition or where temperatures may exceed 130° F.
3. Do not use stove in tightly closed area. Any combustion process consumes oxygen. Make sure you have 20 square inches of opening to provide proper ventilation for this stove.
4. ADDITIONAL VENTILATION MUST BE PROVIDED FOR PERSONS AND OTHER FUEL BURNING APPLIANCES OCCUPYING AN ENCLOSED AREA.
5. Never allow tent walls or ceilings, sleeping bags, clothing or other combustible materials to come within 3 feet of the top of the cooking surface and 1 foot on all sides of the stove.
6. Always use propane bottle in upright position.
7. Non-refillable bottles are dangerous if refilled. Refillable bottles should be refilled only by authorized propane dealers.
8. Before each use, check all rubber hoses to make sure they are not cracked or cut. Keep rubber hoses away from flame and sharp objects.
9. Keep all joints and fittings clean and dirt-free.
10. Leaking propane will accumulate in low places AND IS DANGEROUS. If stove is accidentally turned on, turn off and ventilate area thoroughly.

Coleman

The COLEMAN COMPANY, INC.

OUTING PRODUCTS
GROUP

General Offices · WICHITA, KANSAS 67201
AREA CODE 316 261-3211

April 23, 1976

Mr. Frank Erdos
Environmental Resource Specialist
Dade County Public Schools
North Central Area Curriculum Center
6221 N. W. 29th Avenue
Miami, Florida 33147

Dear Mr. Erdos:

Thank you for your letter of April 14 regarding the materials you are preparing on the "Care and Use of Camping Equipment".

You certainly have our permission to quote any part of the instruction sheets on the Coleman Oasis Tents, Propane Lanterns and Stoves.

Under separate cover we are forwarding 200 copies of the attached Coleman "Campsense" Booklet which we think your teachers will enjoy reading.

If we may be of any further assistance to you, please let us know.

Sincerely,

Bob Ring

Bob Ring
Manager
Marketing & Advertising

BR:hh
Attachment

P. S. Should you need additional copies of the "Campsense" Booklet, please let us know.

1900-1976 Coleman 76 YEARS OF PROGRESS

SAFETY IN THE OUTDOOR CLASSROOM

MODULE 3

MODULE III

SAFETY IN THE OUTDOOR CLASSROOM

A GUIDE FOR TEACHERS

The Everglades Environmental
Study Unit

The curriculum project was
funded by a mini-grant from
the Office of Environmental
Education, Department of
Education, Ralph D. Turlington,
Commissioner

DADE COUNTY PUBLIC SCHOOLS
Miami, Florida

DADE COUNTY SCHOOL BOARD

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Mr. Robert Renick
Mr. William H. Turner
Dr. Linton J. Tyler

The Everglades Environmental Study Unit Project was developed by the North Central Area Curriculum Center in cooperation with Everglades National Park Rangers, teachers and administrators.

Dr. Jeff West, Area Superintendent
Mr. Herbert C. Bloom, Area Staff Director
Mrs. Harriet Ehrhard, Science Consultant

This is one of a series of four (4) modules developed for use by teachers who wish to take students on an extended camping trip in Everglades National Park. These modules provide needed information and resources that enable educators to better use the "outdoor classroom". Additionally, these modules provide resources for teachers to use in their classroom applying concepts of environmental education in seven curriculum areas.

Overview - "Everglades Environmental Study Unit"
A descriptive slide/tape presentation for use by administrators, teachers and parent groups.

Module I - "Ready, Set, Go"
A planning module for principals who want to know how to plan an Everglade Camping Experience for their students

Module II - "Care of Equipment"
A module for teachers and students who want to know how to set up and take care of their camping equipment.

Module III - "Safety in the Outdoor Classroom"
A guide on the rules, regulations, and safety procedures to be followed during the camping experience.

Module IV - "100 Environmental Resources For Teachers"
A guide to free or inexpensive resources to be used in the classroom or in the field.

These modules and slide/tape presentations are available for loan from the North Central Area Curriculum Center, 6221 Northwest 29th Avenue, Miami, Florida.

SAFETY IN THE OUTDOOR CLASSROOM

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READY, SET, GO . . . . a plan for extending the classroom into a natural setting, The Everglades

RATIONALE

Many skills taught in the classroom are applied traditionally in the context of the printed word. There are some skills that need to be experienced in order that the individual fully comprehend their meaning and usefulness in his life. The Everglades Camping Experience, one of several possible study situations in the total environmental program, provides a unique opportunity for the learner to become aware of and practice behaviors that will enhance his life now and later. To maximize personal growth in an environment that contrasts so vividly with the school site, extensive, well-defined planning by the administrator is necessary.

MAJOR GOAL OF MODULE

A comprehensive planning instrument will insure safety for students and staff, provide guidelines for curriculum development, and prepare administrators to assume leadership responsibilities.

OBJECTIVES OF MODULE

This module will:

(1) enable the administrator to relate individual school goals to this environmental experience
(2) define legal responsibilities and provide appropriate forms
(3) facilitate staff and student selection for the Everglades Camping Experience
(4) prepare the administrator for student, staff and parent orientation
(5) illustrate the need for planning pre-and-post site activities
(6) list essential camping equipment information
(7) suggest menus and explain functioning of Food Services
(8) provide a task check list for the administrator

WHY DO THIS AT ALL . . .

goal statements clarified

Any time an educational site is changed from the classroom to the outer community, the administrator is asked to justify to parents and students why such a change is necessary and reasonable. The administrator and staff should be able to state specific school goals and the expected student behaviors that an Everglades camping experience would facilitate.

ACTION TO BE TAKEN:

(1) Review your school's goal statements. A good source would be last year's Annual Report of School Progress.
(2) Select those goals you and your staff feel are relevant to the Everglades Camping Experience.
(3) Develop statements of specific student behaviors (cognitive and affective) being careful to delineate the activities that will bring about these desired behaviors.
(4) Include these statements in your parent and student orientation activities.

SAMPLE

GOAL STATEMENT:

At ____________________ school our program is designed to help students develop a good self image and respect for others.

EFFECTS OF EVERGLADES CAMPING EXPERIENCE ON STUDENT BEHAVIORS

(1) Develops responsible individual action in such activities as keeping a clean camp site, cooking assignments, being ready with proper equipment for scheduled events.
(2) Develops new awareness of the worthiness of self and others by the assignment of equal duties to boys and girls, and participation in experiences that are new and demanding of personal courage.
(3) Provides opportunity for students to become more skilled in social interaction by cooperative living under differing conditions of climate and physical setting, emotional and social needs, racial and ethnic groups.

COMPLYING WITH LEGALITIES

The administrator must be concerned that advanced planning and precautionary measures assure the safety and well-being of the camping group. (Appendix A, Guidelines for Field Trips)

Rules of behavior and specific training of students, staff and involved parents

The administrator should detail an inclusive listing of student and staff behaviors and attempt to secure compliance to these standards at scheduled orienting sessions. Rules for students should include bus behavior as well as safety procedures at the campsite, on trails, in canoes. (See Module on Safety) Adults accompanying students should have a listing describing their responsibilities. (Appendix B, Safety Regulations for Everglades Trip)

At least one adult accompanying the group should be trained in first aid and collect needed items in an easily transported case. A system for having immediate access to emergency contact information for each participant should be devised. Further details are in the Module on Safety.

Students should be supplied with a list of clothing and camping gear they are to provide for the trip. (Appendix C, Everglades Camping Trip Supplies to be Furnished by Student)

Properly designed parental permission forms

Parent permission forms detailing unusual activities, as well as places visited should be utilized. Lunch stops, tent living, slogging (if part of camping plans) and all stops on the itinerary should be specified. Approximate times of departure and arrival should be noted. A space should be provided for the parent to describe allergies or medication procedures. (Appendix D, Everglades Encounter, Field Trip Permission Form)

Appropriate supervision of camping activities

The number of chaperones sufficient to adequately supervise the camping experience depends upon the school's selection of students and planned activities at the campsite. Supervision of the handicapped child might well call for a one to one ratio of adult to child; many schools have found that one adult needs to be assigned to each tent or squad. A slogging activity needs one adult for each five students; canoeing requires one adult in each of six canoes and one additional adult to hike with half the youngsters to Bear Lake, the far point. Fishing also requires close supervision. Resource personnel may be enlisted for a day's special activities in science, art, social studies, music.

Specified carriers for transportation

Contracts with an independent bus vendor need to comply with all state and local requirements. The School Board's Finance Office can list the local bus companies whose insurance certificates are on file. Liability insurance protecting against bodily injury ($100,000 per person and $300,000 per accident or $5,000 multiplied by the rated seating capacity of the bus, which ever is higher), property damage ($50,000) and medical payments ($500) are minimum limits. Instructions for vendor requisition forms are included in this document. (Appendix E, Purchasing Department, Procedure for Field Trips)

Transportation within the park to scheduled daily events must be accomplished by private cars. Drivers of these private cars should be appraised of the fact that their personal car insurance policies may be the primary source for liability suit. In case of driver negligence, the private car driver could be primary target for suit with a suit being filed against the School Board, as well.

Drivers, pulling school-owned trailers (NCAO trailer with hitch), who are not employees of the School Board, should execute a special form (Appendix F, Assurances and Release of Liability) before towing School Board trailers. The form should be signed before the trailer is hitched to a motor vehicle and irrespective of whether the trailer is loaded or unloaded.

Collection and disbursement of funds

Most schools have found that an amount of $15.00 - $20.00 per participant covers the expenses incurred in obtaining bus transportation, food, and various park costs. Monies are raised either through special school projects or individual participant assessments. All monies should be handled according to School Board procedures for Internal Accounting, each expenditure being fully documented.

Another possible source of funding may be found in the Substance Abuse account.

A budget planning sheet is included for record keeping. (Appendix G, Budget Planning Sheet)

Temporary duty leave forms for school personnel

All school personnel accompanying students must file appropriate leave forms in the Area Office three weeks in advance.

Area approval for out-of-county trip

A memorandum requesting permission for an out-of-county study; stating dates of arrival and departure, itinerary, and number of chaperones and staff should be sent to the appropriate area director six weeks in advance.

Arrangements as group campers with Everglades National Park

A memorandum advising the park staff of the expected date and time of arrival and departure, day-by-day activities, and special requests for Ranger aid should be forwarded at least three weeks in advance to:

Martha Akins
Everglades National Park
Environmental Education Program
P.O. Box 279
Homestead, FL 33030
Telephone Number - 247-6211

STAFF AND STUDENT SELECTION

Before making selections of staff or students it is suggested that the administrator review the stated goals and expected student behaviors designed for this program.

WHO are the teachers most able to facilitate the accomplishment of these goals? WHO are the teachers who already value such student behaviors? WHO are the teachers who are skilled in outdoor living and/or will be motivated to train and prepare for this experience?

The Everglades Camping Experience has been justified as a legitimate learning opportunity. It would seem sensible, therefore, to select students who would benefit from instruction in the goal area. It is the responsibility of the principal to make certain that the participants need such an experience.

The principal is also in the position to support student rights and assure non-discriminatory practices in student selection for the camping trip. This means that careful attention be given to the process of determining which students will participate:

(a) Is the camping population representative of the total school body?
(b) What arrangements can be made if a student cannot financially contribute and/or provide camping gear for himself?
(c) How can equal opportunity be afforded to students in selecting this experience?
(d) Are children with exceptionalities being allowed to make this choice?

BUILDING DESIRES AND ALLEVIATING ANXIETIES . . . .

the orienting of various groups

Preparing staff, students and parents for the Everglades Camping Experience involves certain common elements:

(a) imbuing each with a sense of wonder and fascination about the total outdoor experience
(b) acquainting each with the specifics of what is involved in the trip
(c) furnishing each with what they need to do in order to participate legally, safely and joyfully!

BUILDING DESIRES AND ALLEVIATING ANXIETIES . . . . the orienting of various groups

STAFF

MOTIVATION	SPECIFIC INFORMATION	LEGAL REQUIREMENTS
1. Present slide show prepared by NCAO.	1. Acquaint selected staff with camping leadership requirements: a. the need to orient students and parents to camping realities and rules for safe behavior b. the need to assume proper leadership stance . . . no smoking, no alcoholic beverages, no radios, 24 hour supervision of students; adequate provisions for leadership rest breaks; planning and execution of camping activities	1. Initiate temporary duty leave forms.
2. Discuss activities and how they can lead to the achievement of school goals.	2. Assign individual staff members responsibilities, i.e. a. planning activities, ordering supplies b. meal planning and food storage c. equipment usage and maintenance d. pupil/parent orienting e. first aid, daily school site contact, student emergency forms f. overall camp leadership	2. Participate in NEED workshop (provided by Department of Parks).

PARENTS AND CHAPERONES

MOTIVATION	SPECIFIC INFORMATION	LEGAL REQUIREMENTS
1. Present slide show (NCAO) and goals of Everglades Camping Experience.	1. Distribute Everglades Camping Booklet (see students' orientation).	1. Properly attained signatures for permission.
	2. Describe fully the days' planned activities, legal carrier, chaperones and supervisors, needed clothing and equipment, orienting experiences for students, first aid precautionary measures.	2. Attained signature for Assurances and Release for Liability.
	3. Outline chaperones and supervisors' responsibilities: a. 24 hour student supervision b. cooperative adult action c. days' schedules d. enhancing small group study and tent life	3. Provision of needed medication (labeled), instructions to chaperones.
		4. Understanding and support of camping standards and behavior code.

	MOTIVATION	SPECIFIC INFORMATION	LEGAL REQUIREMENTS
STUDENTS	1. Present slide show NCAO; invite former campers to relate their experiences.	1. Present selected campers with Everglades Camping Booklet that includes: a. days' activities, menus b. specific rules of behavior in and out of camp site, trails, bus c. listing of minimal clothing and equipment needs d. proper permission forms e. emergency contact procedures with home and campsite	1. Properly signed permission notes.
	2. View various films on Everglades; browse through books.	2. Prepare for camping by using the school site for a. teaching tent raising and care of equipment b. outdoor cooking and use of mess kits c. emphasizing responsible group and individual behavior and adherence to camping standards d. an overnight sleep-out e. concept preparation for the Everglades	2. Agreement to behavior standards.
	3. Acquaint students with goals of program.		3. Participation in school site orienting activities.
	4. Prepare students for concept development in both affective and cognitive realms.		4. Bringing proper camping clothing and equipment.

TAILORING THE PROGRAM . . . .

planning pre-and-post site activities

Teachers selected for planning the pre-and-post site activities should be fully aware of the psychological and educational needs of participating students. Through surveys and planned conversations, teachers need to determine students' "deficits" and effectively select activities to teach needed skills, attitudes and content.

The principal should encourage selection of activities that would deal with student growth in these vital areas:

1. EMOTIONAL AND SOCIAL

    a. Dealing with being away from home and parental supervision for an extended time
    b. Adjusting to sleeping and eating conditions, sharing of bathroom facilities in the camping community; accepting responsibility for work and group safety
    c. Experiencing sexual and ethnic differences in a new environment
    d. Responding to a foreign environment by making important decisions in the face of "attractive" dangers, i.e. feeding alligators, collecting snakes, wandering away from the group

2. CONCEPTUAL DEVELOPMENT

    a. Identifying environmental components and noting their independence
    b. Understanding man's harmonious partnership with the environment
    c. Comprehending the threats that advanced society makes on the environment
    d. Recognizing their individual roles in maintaining a beneficial balance in the total environment

CAMPING EQUIPMENT . . . .

the intricacies of providing
a home away from home!

The North Central Area Office has purchased much of the needed equipment for the camping experience and is currently fitting a trailer with the following items:

6	Coleman Oasis tents (sleeping at least six each)
2	48 quart Igloo ice chests
2	Coleman propane lanterns
2	5 gallon Igloo water coolers
2	canopies, ropes and stakes
2	hammers
6	galvanized pails
1	propane gas grill with burners
1	propane gas tank and hose 20 lb. capacity
6	canoes (holding at least three each)

It is the responsibility of the receiving principal to check the contents of the trailer for inventory and condition of items before using the equipment in the Everglades. Tents should be dried and checked for needed repairs before use by the camping group. The Area Office should be notified of missing items. See the Module on Camping for more details.

Additional items need to be provided by the home school. Ice chests adequate to hold refrigerated items for the length of the camping experience, extra flashlights, insect repellent, matches with moisture-proof coverings should be gathered. Cooking supplies and equipment are outlined in the menu section of this module.

FULL STOMACHS . . . .

happy campers!

Satisfying, wholesome food prepared and presented in an orderly fashion is a good emotional link to most students' familiar home routine. Menus should be planned that may be simply executed and conservative in the use of fuel and human energy. It is important, too, to consider the day's activities and their proximity to the campsite when planning the menus.

Food Services can be invaluable in planning and procuring needed supplies at advantageous prices. Children on the free breakfast or lunch program may continue to receive this financial assistance. Orders are best placed through the cafeteria manager three to four weeks in advance, to allow for delivery and substitutions. It may be necessary to supplement the planned menu with groceries from outside vendors.

Food Service managers are adept at suggesting the smallest amount of pots and pans to adequately conduct the food program. The NCAO stove has two burners and a grill large enough to sunny-side up thirty eggs at a time. The following equipment and supply list may be helpful:

2 large soup pots
2 ladles
2 large serving spoons
1 spatula
1 collander
2 can openers
2 slicing/paring knives
extra mess kits and cups
pot holders
dish towels

1 roll paper towels
1 roll aluminum foil
1 bottle liquid soap
1 gallon bleach
1 grill cleaning stone
1 box plastic trash bags
sponges
matches in water-proof container

SAMPLE MENUS

	Breakfast	Lunch	Dinner	Snack
1st Day	At home	Bag Lunch	Spaghetti Sliced tomatoes Carrot sticks French bread Drink	Pretzels Drink
2nd Day	French toast Jelly Chunk cheese Milk*	Peanut butter/jelly Apple/cookie Milk*	Hamburger/roll Salad Corn Apple sauce Bread/butter Milk*	Marshmallows Drink
3rd Day	½ orange Fried egg ½ Ham slice Milk*	Hoagies Chips Milk* ½ Banana	Ravioli Mixed Vegetables Peaches Bread Milk*	Cookie Drink
4th Day	Pancakes/Jelly Fruit cocktail Milk* Chunk of Cheese	Hot dogs Beans Orange Milk*	Beef stew French bread Salad Apple Milk*	Candy Drink
5th Day	Cereal/Milk* Toast/jelly Orange Juice Milk*	Cheese Sandwiches Pickles Chips Milk* Apple or orange	At Home	

* Milk may be ordered through the restaurant at Flamingo. Some schools carry a week's supply of milk, iced sufficiently to last the week. Other schools substitute fruit juices (canned) at various mealtimes.

SIX WEEKS COUNTDOWN . . . . a principal's checklist

DATE OF ACTION	PRINCIPAL'S TASK	RESPONSIBILITY ASSIGNED TO	NOTES
6 Weeks Before:	1. Write memorandum to NCAO, requesting area permission for out-of-county travel; details of trip, p. 5		
	2. Confirm NCAO date for camping, use of equipment and park with assigned director		
	3. Select goal statements and desired student behaviors, p. 2		
	4. Select staff, provide orientation and assign responsibilities, p. 5 - 7		
	5. Send selected staff to NEED workshop, when offered		
	6. Send selected staff member to first-aid training, when offered		
5 Weeks Before:	1. Select chaperones		
	2. Initiate student selection process, p. 5-6		
	3. Arrange for transportation carrier, p. 4		
	4. Arrange for private cars (within park) and car to pull NCAO trailer		
	5. Supervise selected staff in planning responsibilities		

COUNTDOWN Con'd.

DATE OF ACTION	PRINCIPAL'S TASK	RESPONSIBILITY ASSIGNED TO	NOTES
4 Weeks Before:	1. Finalize student selection		
	2. Initiate menu planning, orders from Food Services, p. 11-13		
	3. Make arrangements for additional resource personnel at camping site, if needed		
	4. Order instructional supplies for on-site activities, if needed		
3 Weeks Before:	1. Begin pre-site activities (emotional/social, conceptual) with selected students, p. 9-10		
	2. Initiate student orientation of specific camp-site behaviors using camping booklet, p. 9		
	3. Submit temporary duty leave forms for selected staff members to NCAO		
	4. Send memorandum to Park Service personnel, detailing day-by-day activities in the park, p. 5		
	5. Train chaperones in day-by-day activities, precautions for safety, well-being, p. 8		
	6. Attain signature on Assurances and Release of Liability form, p. 4		
	7. Arrange for coverage of classes for staff attending the Everglades Camping Experience		

COUNTDOWN Con'd.

DATE OF ACTION	PRINCIPAL'S TASK	RESPONSIBILITY ASSIGNED TO	NOTES
2 Weeks Before:	1. Hold pre-site camp-out or cook-out for campers, p. 9		
	2. Orient parents of campers, p. 8		
	3. Insist that all permission forms be on file this week, p. 3		
	4. Conduct joint staff-chaperone final planning session		
	5. Continue pre-site activities for students		
1 Week Before:	1. Collect all monies		
	2. Assist assigned staff member to check camping trailer for items needing repair		
	3. Call final staff meeting to check on procedures, items needed, emergency contact system, p. 3		
	4. Continue pre-site activities for students		

GUIDELINES FOR FIELD TRIPS

1. Describe briefly the activities and/or unique experiences requiring unusual physical stamina or stress.

2. Be flexible regarding the elements of time and sequence of events and explain that it might be necessary to alter the schedule and personnel due to unforeseen circumstances.

3. Describe any unusual equipment which will be used or wearing apparel which will be required.

4. Provide an opportunity for parents (guardians) to describe any allergies, allergies to drugs, physical limitations, other special health problems, medications taken routinely and any other information which should be known.

5. Have available, or have easy access to emergency contact information for each field trip participant and establish a method of accounting for participants on departure, upon arrival, and upon return.

6. Explain to chaperons and students their responsibilities and provide, as appropriate, other necessary information regarding safety procedures and rules en route, upon arrival and return from field trip.

7. Select a sufficient number of adult chaperons approved by the principal. Generally there should be one adult for ten elementary pupils and one adult for every fifteen secondary students. The number will vary depending on the nature of the trip and the age and maturity of the group.

8. Confirm that the field trip form includes all scheduled stops. Scheduled stops means all stops scheduled - including lunch stops and bathroom stops.

9. In order to provide a meaningful field trip experience an orientation should be provided by the sponsoring teacher to familiarize students and chaperons with purposes and procedures of the trip and the essential features to observe.

EDUCATIONAL EXPERIENCES ARE MOST HIGHLY REWARDING WHEN ACCOMPLISHED SAFELY

Division of Elementary and Secondary Education
January 3, 1975

SAMPLE

SPRINGVIEW ELEMENTARY SCHOOL
1122 Bluebird Avenue
Miami Springs, Florida

TO: All Campers and Their Parents

FROM: Mr. Sam Marzella, Mr. William Alan, Miss Francine Littman, Mr. Don Knauer

SUBJECT: SAFETY REGULATIONS FOR EVERGLADES CAMPING TRIP

For a safe camping trip, please discuss and stress with your child the following safety procedures:

1. USE THE BUDDY SYSTEM AT ALL TIMES - Stay with your buddy and remain with the group at all times. Do not get behind nor ahead of the group.
2. STAY WITHIN THE GIVEN BOUNDARIES - Always listen to and follow the directions of the instructors and chaperones.
3. NO SWIMMING AT ANY TIME - Our "slough slogging" experience is a wading trip only. (Wading means walking in shallow water.)
4. SHOES MUST BE WORN AT ALL TIMES - This also includes the "slough slogging" experience.
5. BE RESPONSIBLE FOR YOUR OWN SUPPLIES - All students will be responsible for all of their belongings at all times. All students must keep their belongings in their tent or on their person.
6. INDIVIDUAL FLASHLIGHTS MUST BE CARRIED AND USED AT NIGHT.
7. DO NOT WALK CLOSE TO OR FEED ALLIGATORS OR ANY OTHER WILDLIFE.
8. WALK THROUGH ALL TRAILS - (no running) Watch where you are walking.
9. AVOID DRINKING ANY WATER UNLESS IT COMES FROM AN APPROPRIATE DRINKING FOUNTAIN.
10. STUDENTS MUST KEEP THEIR HANDS TO THEMSELVES - Students must not touch, take or move the plant life or any other objects unless instructed to do so. (Do not climb trees or any other plant life.)
11. NO EATING OR CHEWING OF ANYTHING UNLESS INSTRUCTED TO DO SO IN THE DESIGNATED AREAS.
12. REPORT ALL ACCIDENTS TO AN ADULT - When in doubt, ask an adult.
13. ALL STUDENTS ARE EXPECTED TO DISPLAY GOOD MANNERS, COMMON SENSE, AND GOOD SPORTSMANSHIP AT ALL TIMES.

NOTE: Any child that does not follow the safety regulations or the camping procedures may be removed from the activity at any time.

APPENDIX C

SAMPLE

SPRINGVIEW ELEMENTARY SCHOOL
1122 Bluebird Avenue
Miami Springs, Florida

TO: All Students Going on Camping Trip

FROM: Mr. Marzella, Mr. Alan, Miss Littman, Mr. Knauer

SUBJECT: EVERGLADES CAMPING TRIP SUPPLIES TO BE FURNISHED BY STUDENT

Each student must bring the following supplies:

A pillow case or duffle bag
Sleeping bag or 2 blankets
Sheet (to be inserted in sleeping bag)*
Pillow*
Toothbrush
Toothpaste
Face Soap
Plastic drinking cup
Mess kit
Fork and spoon
Deodorant
Talcum powder*
Approved medication (with name on it)
Cotton gloves - 1 pair*
Handkerchief
Facial tissues
2 towels
2 washclothes
Comb and hair brush
Hiking shoes (hard shoes) 1 pair
Sneakers (2 pairs)
Underwear (4 changes)
Long pants (2 pairs)
2 long sleeve shirts
2 short sleeve shirts
4 T-shirts*
Sweater
Jacket (weather-proof - windbreaker type)
Raincoat or Poncho
Hat
Air mattress*
Souvenir money (approx. 50¢)*
Instamatic Camera and film*
Flashlight with extra batteries
Binoculars*
Telescope*
Insect repellent (spray-liquid)
Clipboard*
2 pencils
3 clothes pins
Canteen*
2 Plastic bags - Laundry, wet items
1 sketch pad 12 x 18
Socks (4 pairs)

*OPTIONAL

ALL ITEMS SHOULD HAVE THE STUDENT'S NAME ON THEM WHEREVER POSSIBLE

APPENDIX D

SAMPLE

EVERGLADES ENCOUNTER
FIELD TRIP PERMISSION FORM

Date________________

Name________________________

Dear Parents,

Your child is invited to participate in a field trip experience January 20 - January 24, 1975, sponsored by Miami Springs Elementary School. This is a special program offered by the Dade County Public Schools.

The field study focuses on a tour of:

1. Lunch at Grossman's Hammock
2. The Royal Palm area, including the Anhinga Trail
3. Long Pine Key
4. Po-hay-okee
5. Mahogany Hammock
6. Fishing at West Lake
7. Christian Point Trail
8. A canoe trip on Bear Lake
9. Flamingo camping grounds
10. Slogging at a slough

It also includes a stop at a vegetable field for picking produce. Children will sleep in tents and help at the camp site to prepare meals and maintain the site.

In order for your child to have the safest and best educational experience you should go over the safety rules of the participant's packet.

Approximate time of departure: January 20, 1975 at 9:30 a.m.
Approximate time of return: January 24, 1975 at 12:30 p.m.
Transportation: A & M Bus Service
Within the park, cars will be driven
by Mrs. Cox, Mr. MacLeod and Mrs. Loy.

Your signature on the space provided below is your permission for your child to go under conditions stipulated above. You understand, of course, precaution will be taken to safeguard your child against accidents, but you should evaluate carefully the hazards involved before granting your child permission.

Margot J. Silverman, Principal
School Telephone - 888-4558

Parent Signature________________________

APPENDIX D

FIELD TRIP FORM
DADE COUNTY PUBLIC SCHOOLS

Name of School ____________________ Date __________

Teacher Sponsor ____________________ Subject __________

Activity Planned: (destination)(s) (1) ____________________

(2) ____________________ (3) ____________________

Purpose of Trip ____________________

____

Date of Departure ____________________ Approximate Time __________

Date of Return ____________________ Approximate Time __________

The above time schedule and/or personnel may be altered due to unforseen circumstances.

Type of Transportation ____________________ Cost: __________
(City bus, school bus, other)

I give permission for my son/daughter ____________________

to participate in the above described activity.

Signature ____________________ Resident Tel. No. ________ Business Tel.No. ___
(Parent or Guardian)

Physician s Name ____________________ Physician s Tel.No. __________

if applicable, please complete the following:

My child has the following medical problems: ____________________

My child takes the following medications routinely: ____________________

My child has the following allergies: ____________________

Other information we should have: ____________________

____

If applicable, please sign below in order to inform and authorize the teacher to superivse your child in taking prescribed medication.

Type of medication: __________ Dosage to be taken: __________

How often taken: ____________________

I (can) (cannot) serve as a chaperon if needed. Signature ____________________
(Parent or Guardian)

Division of Elementary and Secondary Education
January 3, 1975

Auth.: MIS; Exp. Date: 4-9-75

RESOURCES

RESOURCES:

Florida Aides for Classroom Teachers (FACT)

Florida Power and Light Company will provide the teacher with a catalog of free resources. Titles include Safety, Health, and Ecology.

To obtain catalog -

Florida Power and Light Company
P.O. Box 013100

American Red Cross (576-4600)

ARC will provide first aid and canoeing training. Also films and booklets on first aid, water safety and canoeing.

Crandon Park Zoo - Educational Experience (361-5421, Ext. 14)

Crandon Park Zoo has a fifty-minute slide presentation on poisonous snakes. Also included is an exhibit of live poisonous snakes.

Health Department (325-2566)
Division of Educational Services

Resources include pamphlets on air pollution, litter, and sanitation.

Tropical Audubon Society
7615 S.W. 62nd Avenue (666-5111)

Resources include slides and films on plants and animals of the Everglades.

REFERENCE

SOURCE

Transportation, Educational Trips

2. Regulations

j. Bus drivers and schools should be familiar with the following:
   1) All trips are to be carefully planned and have adequate supervision of at least one teacher per class so as to maintain order on the bus. It is the responsibility of the teacher to make certain through classroom discussions that the pupils are thoroughly familiar with bus rules and know that they are required to obey these rules. It shall be the teacher's responsibility to see that all passengers observe classroom conduct while riding the bus. The teacher must remain with the bus driver until all passengers have completed the trip.
   2) Wet, dirty, improper or any other dress attire which would make the bus objectionable for regular school bus use will not be permitted on the bus.
   3) Eating, drinking and singing will not be permitted on buses.
   4) Only stops approved on the original Field Trip Requisition are to be made.
   5) Smoking is not permitted on the bus.
   6) Schools using buses for night trips are required to help the drivers clean up the inside of the bus upon completion of such trips.
   7) The Sunshine State Parkway is not to be used for Dade County school bus service.
   8) Teachers or chaperones are responsible for paying tolls and parking fees when they are required.

3. Chaperones for School Buses

a. All chaperones shall be selected and authorized by the principal to to ride the bus.
b. Chaperones are to be limited to no more than five to any given bus.
c. Chaperones are not permitted to bring their child on field trips unless such child is a member of the participating class group.
d. Women who are visibly pregnant are not permitted to serve as chaperones
e. All chaperones are expected to abide by the school bus rules and regulations and see that pupils obey them.

GENERAL AUTHORITY 230.22 FS.

MEMORANDUM

November 1, 1972

TO: Mr. Richard O. White, Director
Department of Program Development

FROM: Harriet Ehrhard, Consultant
Science Education

SUBJECT: SAFETY PROCEDURES AT ENVIRONMENTAL EDUCATION CENTER

In reply to your memorandum of October 20, 1972 regarding safety procedures at Crandon Park the following items correspond to your questions.

1. As of December 1, all teachers bringing students to the Environmental Education Center, Crandon Park will be required to attend an orientation workshop. Appropriate notices will be sent prior to the November 15 session, and each month thereafter. The teachers who have not attended a previous workshop will be given one type of instruction. Those who either have attended the workshop or who have brought groups to the Center previously, will be given an updating of procedures and additional information.

2. Teacher orientation will continue to stress the importance of pre-visit preparation, that before the visit students should be arranged into three groups; "buddies" should be assigned; emergency sheets giving names of students, their parents, and emergency contacts should be prepared; name tags for all children should be prepared; children should be told to wear shoes, that they may have a wading experience, but no swimming and are not to bring swimming suits or any kind of swimming equipment; and three adults must be scheduled to accompany the group.

3. The first activity when children arrive at the Center is a review of safety procedures. The children are instructed where the boundaries are and where they are to eat lunch under the supervision of their own teachers. They are told not to go near the water without an instructor, that there is no swimming, no tree climbing and that they must keep on their shoes. One part of the orientation is a lesson on dangerous animals and plants of the area, both on land and in the water.

   Before each field trip, the instructor repeats the various procedures to be observed and the cautions to be exercised.

4. Shore field trips are scheduled to conform with weather and tide conditions using a maximum number of instructors and adults.

5. All students are assumed to be non-swimmers.

6. The Environmental Education Center Staff will continue to contact the schools by telephone before the scheduled visits to discuss general procedures and safety. In addition, we will require, in writing before a school's arrival, a list showing the students paired for the "buddy" system and divided into three groups.

First Aid and Senior Life Saving Courses have been arranged starting early in November. The Environmental Education Center Staff have signed up for the First Aid Course. No pre-registration is necessary for the Life Saving Course. Successful participation would result in current certification. Both courses are being given by the American Red Cross.

The purchase of flotation devices for the students on shore trips is being investigated. Two additional "Airway Rescue Breathers" have been ordered.

The Everglades National Park personnel have been requested to stress safety procedures in the workshops they conduct for the teachers. We are asking that there be one adult for every ten children on the field trips. Pre-visit information to the schools will re-emphasize the importance of following the safety guidelines.

I will appreciate any suggestions for improving and implementing safety conditions in all environment and science education classes.

HE/mb

cc: Dr. Leonard Britton
Mr. Paul Bell
Environmental Education Center

MEMORANDUM INFORMATIONAL COPY June 17, 1975

TO: Mrs. Harriet Ehrhard, Consultant
Instructional Department

FROM: Jack W. Serig, Safety Supervisor
Risk Management

SUBJECT: LIGHTNING PROTECTION

In response to your recent inquiry for recommendations for lightning protection for students participating in the Environmental Education Center (EEC) programs, the enclosed information is provided.

This information was selected from the National Fire Protection Association's National Fire Code.

The building used for the Center is classified as "unprotected". This means that it is not afforded lightning protection. This was confirmed with Mr. Bearegard, Planning Section, Metro Parks and Recreation Department.

Since the building is "unprotected", and is located in an exposed place on the open beach, it should not be utilized during thunder and lightning storms. During these times, it is recommended that students be loaded on to the metal-topped bus which affords a greater degree of protection.

In discussing this with Mrs. Miller, a teacher assigned to the Center, she stated that the children could be bussed to another location for an alternate educational activity during thunderstorm periods.

Please advise if this office can be of further assistance.

JWS/ff
Enclosure

GUIDELINES FOR FIELD TRIPS

1. Describe briefly the activities and/or unique experiences requiring unusual physical stamina or stress.

2. Be flexible regarding the elements of time and sequence of events and explain that it might be necessary to alter the schedule and personnel due to unforeseen circumstances.

3. Describe any unusual equipment which will be used or wearing apparel which will be required.

4. Provide an opportunity for parents (guardians) to describe any allergies, allergies to drugs, physical limitations, other special health problems, medications taken routinely and any other information which should be known.

5. Have available, or have easy access to emergency contact information for each field trip participant and establish a method of accounting for participants on departure, upon arrival, and upon return.

6. Explain to chaperons and students their responsibilities and provide, as appropriate, other necessary information regarding safety procedures and rules en route, upon arrival and return from field trip.

7. Select a sufficient number of adult chaperons approved by the principal. Generally there should be one adult for ten elementary pupils and one adult for every fifteen secondary students. The number will vary depending on the nature of the trip and the age and maturity of the group.

8. Confirm that the field trip form includes all scheduled stops. Scheduled stops means all stops scheduled - including lunch stops and bathroom stops.

9. In order to provide a meaningful field trip experience an orientation should be provided by the sponsoring teacher to familiarize students and chaperons with purposes and procedures of the trip and the essential features to observe.

EDUCATIONAL EXPERIENCES ARE MOST HIGHLY REWARDING WHEN ACCOMPLISHED SAFELY

Division of Elementary and Secondary Education
January 3, 1975

M E M O R A N D U M November 25, 1975

1975 DEC 1 PM 3:09

TO: Dr. E. L. Whigham, Superintendent of Schools

FOR: ✓ Dr. Leonard Britton, Associate Superintendent
for Instruction, and
Dr. Jeff West, Area Superintendent,
North Central Area

FROM: Attorney's Office

SUBJECT: REQUEST FOR LEGAL OPINIONS FOR 1) DEVELOPMENT OF DRIVER RELEASE FORM AND 2) APPROPRIATENESS OF GUIDELINES FOR FIELD TRIPS

In response to your captioned request regarding the Environmental Camping Program operated between the North Central Area and the National Park Service in Everglades National Park, we suggest that drivers pulling school-owned trailers, who are not employees of the School Board, execute the form entitled ASSURANCES AND RELEASE OF LIABILITY before undertaking to tow the trailers owned by the School Board. The form should be executed before the trailer is hitched to a motor vehicle and irrespective of whether the trailer is loaded or unloaded.

We have reviewed the FIELD TRIP FORM submitted to us for review and find it appropriate and sufficient for the purposes intended.

The Environmental Camping Program presents no legal standards of conduct differing from those attendant to any field trip, save and except for its duration. The program is unique in that it is a week-long experience. The standard of conduct required by law to use reasonable care for the safety of the students is not changed. However, in view of the duration of the Environmental Camping experience, the reasonable measures used for field trips, generally, become intensified in degree. Students and supervisors alike should be more intensely screened to determine whether they are physically capable of enjoying the week-long experience. The orientations of the supervisors and the students preceding the week-long experience should be intensified in accordance with the magnitude of the program undertaken. Supervisors and chaperones should be made acutely aware of the fact that the students will be in an unfamiliar environment for a protracted period and be attracted and intrigued with many events of interest which could detract them from taking measures for their own safety. In essence, it is suggested that for the Environmental Camping Program, the initial screening and orientations be intensified and that supervisors be made aware of and exercise the continuing supervision of students throughout the week-long experience.

FRANK A. HOWARD, JR.
Board Attorney

Prepared by:

THOMAS G. SPICER,
Assistant Board Attorney

FAH:TGS:pr

100 ENVIRONMENTAL RESOURCES FOR TEACHERS

MODULE 4

MODULE IV

100 ENVIRONMENTAL RESOURCES FOR TEACHERS

The Everglades Environmental
Study Unit

The curriculum project was
funded by a mini-grant from
the Office of Environmental
Education, Department of
Education, Ralph D. Turlington,
Commissioner

DADE COUNTY PUBLIC SCHOOLS
Miami, Florida

DADE COUNTY SCHOOL BOARD

Dr. Ben Sheppard, Chairman
Mrs. Ethel Beckham, Vice Chairman
Mr. G. Holmes Braddock
Mrs. Phyllis Miller
Mr. Robert Renick
Mr. William H. Turner
Dr. Linton J. Tyler

The Everglades Environmental Study Unit Project was developed by the North Central Area Curriculum Center in cooperation with Everglades National Park Rangers, teachers and administrators.

Dr. Jeff West, Area Superintendent
Mr. Herbert C. Bloom, Area Staff Director
Mrs. Harriet Ehrhard, Science Consultant

This is one of a series of four (4) modules developed for use by teachers who wish to take students on an extended camping trip in Everglades National Park. These modules provide needed information and resources that enable educators to better use the "outdoor classroom". Additionally, these modules provide resources for teachers to use in their classroom applying concepts of environmental education in seven curriculum areas.

Overview - "Everglades Environmental Study Unit"
A descriptive slide/tape presentation for use by administrators, teachers and parent groups.

Module I - "Ready, Set, Go"
A planning module for principals who want to know how to plan an Everglade Camping Experience for their students

Module II - "Care of Equipment"
A module for teachers and students who want to know how to set up and take care of their camping equipment.

Module III - "Safety in the Outdoor Classroom"
A guide on the rules, regulations, and safety procedures to be followed during the camping experience.

Module IV - "100 Environmental Resources For Teachers"
A guide to free or inexpensive resources to be used in the classroom or in the field.

These modules and slide/tape presentations are available for loan from the North Central Area Curriculum Center, 6221 Northwest 29th Avenue, Miami, Florida.

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Rationale

Many agencies, organizations, and environmentally aware industrial complexes have produced valuable environmental educational materials for use in schools. Most of the materials are provided at no cost to teachers. Some are provided at a nominal cost. A few films and audio-visual materials are provided on a loan basis.

There are local agencies and organizations who will provide speakers, field-trips or workshops.

The Dade County Public School has developed curriculum bulletins, multi-media packages and films on many aspects of environmental education. The Environmental Center and the School Volunteer Program are also source of information.

This resource guide on environmental education will provide you with a directory to these sources of information.

How to Use this Guide To Obtain Materials

Environmental literature is usually provided in the form of teacher guides and/or student information booklets. In many cases you will be able to obtain quantities for the entire class.

1) Write your request on school stationary.
2) Indicate the type of material and the quantity you need.
3) If you desire to write to many sources, you may make up a form letter on school stationary.
4) You may wish to have your students write the letters for you. In this case, have the letter begin "I am writing this letter form my teacher.....".

5. You may wish to have your students write personal letters requesting that the information be sent directly to them.

6. In some cases, the resources you request are no longer available or are being reprinted. You may want to write to more than one source if you feel that the particular information is very important.

SECTION II

Local Resources

American Red Cross - Dade County Chapter

The ARC will provide booklets, films and training in various areas of safety.

Council of Garden Club Presidents

Simpson Memorial Garden Center
55 Southwest 17th Road
Miami, Florida 33129

The Garden Club provides workshops for teachers, curriculum materials, speakers and demonstrations. They also provide art activities using natural objects.

Crandon Park Zoo, Education Department - Phone: 361-5421 (Ext. 14)

Crandon Park Zoo will provide on the school premises, lecturers, demonstrations and/or slide presentations on topics such as Zoo Careers, Poisonous Snakes, Animals, and Endangered Species. Their calendar fills fast so you must schedule early in the school year.

Dade County Department of Public Health
Office of Health Education

1350 N.W. 14th Street
Miami, Florida

The public health department will provide booklets on various health related topics.

Florida Aides for Classroom Teachers (FACT)

Florida Power and Light Company
P.O. Box 013100
Miami, Florida

Florida Power and Light Company will provide a catalog of free resources. Included are topics on safety and health.

Tropical Audubon Society
7615 S.W 62nd Avenue
Miami, Florida
Phone: 666-5111

The Audubon Society provides schools with guest speakers, slide presentations and literature on environmental topics.

SECTION III

Newsletter
or
Keeping Informed

Many organizations have monthly newsletter that inform interested citizens on current issues in regards to the environment. Most also include a bibliography of free or inexperience resources.

CSPI Newsletter

Center for Science in the Public Interest
1757 S. Street, N.W.
Washington, D.C. 20009

The center collects information and indicates action on a wide range of public interest issues, including energy, environmental protection, consumer safety, and health and nutrition.

Eco Centric - "Environmentally Concerned Education anyone Interested in Spaceling Earth".

The Eco Centric
Environmental Studies Center
Bowling Green State University
Bowling Green, Ohio 43403

A newsletter that describes environmental activities and resources for teachers.

Energy Activity Guide

Park Project on Energy Interpretation
National Recreation and Park Association
1601 North Kent Street
Arlington, Virginia 22209

The "Energy Activity Guide" contains information, activities, and a bibliography on the topic of energy conservation.

Energy Conservation Corps Newsletter

Bolton Institute, Inc.
1835 K Street, N.W.
Suite 302
Washington, D.C. 20006

The newsletter contains energy conservation tips and other information.

Environmental News

United States Environmental Protection Agency
Washington, D.C. 20460

Brief news items from the Environmental Protection Agency.

Phoenix Quarterly

Institute Of Scrap Iron and Steel, Inc.
1729 H. Street, N.W.
Washington, D.C. 20006

Phoenix Quarterly is an industrial publication with the objective of bringing about a greater awareness of the still industry's role in concerning the future.

Resources

Resources for the Future
1755 Massachusetts Avenue, N.W.
Washington, D.C. 20036

"Resources" is a newsletter summarizing research on studies on resources.

The Energy Reporter

Federal Energy Administration/
Citizen Newsletter
Washington, D.C.

A useful monthly report to citizens on energy news, new publication, and conferences.

Tropical Trails

Tropical Trails is a newsletter of the Dade county Park and Recreation Department's outdoor education and interpretive program.

50 Southwest 32nd Road
Miami, Florida
Phone: 854-3530

SECTION IV

State Agencies

A GUIDE FOR PROCUREMENT OF

FREE

STATE AGENCY SERVICES, MATERIALS, AND AUDIO-VISUAL AIDS

FOR ENVIRONMENTAL EDUCATION

Florida agencies charged with environmental responsibilities have been producing valuable environmental education materials for many years. The use of these materials has been limited because of the lack of a convenient dissemination vehicle. "The Environmental Education Act of 1973," created a Bureau of Environmental Education in the Department of Education, providing a way for State agencies to distribute their materials to educators.

The Department of Education is pleased to join with sister State agencies in producing information about services and materials which may be obtained free of charge and which should prove most helpful in environmental education endeavors.

Teachers should order single copies of items which will be useful.

* * * * *

For further information or additional copies of this publication

write to:
Florida Department of Education
Bureau of Environmental Education
Miles Johnson Building
Tallahassee, Florida 32304

BIBLIOGRAPHY OF FREE SERVICES, MATERIALS, AND AUDIO-VISUAL AIDS

Provided By: Department of Agriculture
Division of Forestry

Department of Commerce

Department of Education
Division of Elementary and Secondary Education

Department of Health and Rehabilitative Services
Division of Health

Department of Natural Resources
Division of Game and Fresh Water Fish

Department of Pollution Control

DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

The Department of Agriculture and Consumer Services has far-ranging duties in the environmental field. Animal industries, fruit and vegetable industries, and even the Division of Standards are all under this department. The Division of Chemistry provides the technical support to protect consumer interests as well as certifying various pesticides and fertilizers.

The following publications may be ordered from: Department of Agriculture and Consumer Services, Mayo Building, Tallahassee.

Bush, C. S. FLOWERS, SHRUBS AND TREES FOR FLORIDA HOMES. Bulletin No. 195. Tallahassee: Florida Department of Agriculture and Consumer Services, 1969.
This bulletin is oriented toward the ornamentals and exotic plants that have been adopted by the nursery industry and used in Florida landscaping. The text deals with such environmental factors as soil types, temperatures, salt tolerance and the hardiness of Florida's most popular ornamental plants. The urban ecologist can make good use of this bulletin when dealing with man-modified communities. It can be used as a basis for discussion regarding the ecological effects of introductions and the use of exotics versus the use of native species for landscaping.

________, and Morton, J. F. NATIVE TREES AND PLANTS FOR FLORIDA LANDSCAPING. Bulletin 193. Tallahassee: Florida Department of Agriculture and Consumer Services, 1969.
This is a companion volume to Bulletin 195. It deals with the benefits of planting native ornamentals, discusses the plant protection law and itemizes many of the environmental requirements for native species of trees and shrubs. It is a handy reference for the urban ecologist dealing with man-modified communities.

Department of Agriculture and Consumer Services. SOIL AND WATER CONSERVATION DISTRICTS WORK WITH NATURE TO PROTECT AND IMPROVE THE ENVIRONMENT. Tallahassee: Department of Agriculture and Consumer Services. (Undated.)
A pictoral guide to the projects and responsibilities of Florida's Soil and Water Conservation Districts. It has very little text but deals with the problems of soil erosion and land use as they relate to conservation.

——. SUMMARIZING FLORIDA AGRICULTURE. Tallahassee: Department of Agriculture and Consumer Services, 1970.

Agriculture provides one of Florida's major land uses. It exerts a major influence on the environment and this booklet shows the magnitude of agriculture on our economic, social and environmental systems. This booklet is a handy source for facts and figures concerning land use and agricultural commodities.

DEPARTMENT OF AGRICULTURE: Division of Forestry:

The Division of Forestry in the Department of Agriculture and Consumer Services is involved in forest protection from fire, insects and disease. It promotes reforestation, soil and water conservation and outdoor recreation through its many and varied conservation edication programs. The Division has eighteen district offices located throughout Florida.

The following publications may be ordered from: The district office nearest you or from the Division of Forestry, Collins Building, Tallahassee.

Chellman, Charles W. INSECTS, DISEASES, AND OTHER PROBLEMS OF FLORIDA'S TREES. Bulletin No. 196. Tallahassee: Florida Department of Agriculture and Consumer Services, 1971.
This useful booklet contains a wealth of information for both the commercial tree farmer and the urbanite with a few shade trees. Excellent color photographs show the adaptations for various insect pest providing materials for studies in diversity as well as abundance and distribution. Recommendations for pesticide use and Florida's pesticide laws are summarized.

Florida Division of Forestry. FORESTRY HANDBOOK. Tallahassee: (updated and published annually.)
This comprehensive handbook was prepared primarily for the Vo-Ag student attending the annual forestry training camp. Much of the material can be adapted for classroom use. The forest ecology section is especially useful for orienting studies of wooded environs.

_______. FORESTRY FILM CATALOG. Tallahassee: 1972.
Contains an annotated bibliography of 81 films available from the Division of Forestry. Projection instructions and details of how to order the films are also included.

_______. SALT TOLERANT TREES AND SHRUBS FOR SOUTH FLORIDA. Tallahassee: 1972. (Mimeographed.)
Divides the lower coastal area into three regions and lists the vegetation according to salt tolerance. This publication can be used to help demonstrate physiological and morphological adaptation of vegetation and its importance in the distribution of coastal plant communities.

Mattoon, Wilbur R. FOREST TREES OF FLORIDA. 10th Edition. Tallahassee: Florida Division of Forestry, 1972.
A valuable teaching aid that will help identify most of the major forest trees. The excellent illustrations and capsule descriptions of the silviculture and natural history of each species provides a wealth of ecological information.

Myers, J. Walter, Jr. TEN LESSONS IN FORESTRY. 7th Edition. Baton Rouge: Louisiana Forestry Commission, 1972.
These intermediate level lessons present a clear picture of the forest as a dynamic, renewable resource. It explains man's need for forests not only for fiber, but as a vital part of our life support system. Many illustrations compliment the text and a list of references is provided.

Schory, Elbert A., Sr. EUCALYPTUS PLANTING GUIDE FOR FLORIDA. Ft. Myers: Division of Forestry. (Undated).
This booklet examines several species of eucalyptus (Myrtle Family) for possible introduction to Florida. In addition to being a well written, interesting study, it provides food for thought concerning the environmental hazards of introductions.

Schory, Elbert A., Sr. SALT TOLERANT, COLD HARDY, DROUGHT RESISTANT, TREES AND SHRUBS FOR NORTH AND CENTRAL FLORIDA. Ft. Myers: Florida Division of Forestry, 1970.
This publication assigns a numerical value (1 to 3) to North and Central Florida trees and shrubs in each of three categories: salt tolerance, cold hardiness and drought resistance. The list is based on a field survey which combined the efforts of 25 foresters working in conjunction with their local commercial nurserymen. Utilizing this material, the general public will be better equipped to select useful species.

Schory, Elbert A., Sr. 60 TREES FOR SOUTH FLORIDA. Ft. Myers: Florida Division of Forestry, 1972.
The descriptions contained in this book are of some of the more common and useful trees - the "tried and true" standbys which should give good results under a wide variety of conditions and require little maintenance. The material should be helpful to homeowners, city planners, developers, conservationists and others interested in environmental improvement. Color photographs add sparkle to this publication which, due to production costs, has limitations set on its distribution.

DEPARTMENT OF COMMERCE

Florida's Department of Commerce is the counterpart of the U. S. Department of Labor and U. S. Department of Commerce. Its duties include areas of employment, workman's health and safety and unemployment compensation. In addition, the Department is responsible for commercial and tourism development in Florida.

The following publications may be ordered from: Department of Commerce, Direct Mail Section, Collins Building, Tallahassee.

Teachers Packet - contains materials on Florida's natural areas and recreational sites. Packets are filled on a "what's available" basis but always contain a goldmine of pictures and display materials that help students learn what's in the environment around them.

DEPARTMENT OF EDUCATION

The Department of Education is charged with broad responsibilities in developing and maintaining public instruction at all levels across the state.

The following publications may be ordered from: Bureau of Environmental Education, Miles Johnson Building, 347 South Duval Street, Tallahassee.

Department of Education. Anti-Litter Curriculum Packet. Tallahassee: Department of Education. (Undated.)
Glenn Glitter has 15 interdisciplinary activities that are adaptable for any grade level. This packet is designed to develop positive attitudes towards a clean environment by involving students with projects centered around litter.

________. Computations about the causes and effects of pollution. Tallahassee: Department of Education. (Undated.)
This handbook contains exercises designed to improve mathematical skills usually taught in middle schools. Mathematical strands are used to help quantify environmental problems and the suggested projects encourage student research and involvement. Exercises are designed around actual Florida pollution problems and present a realistic view of the amounts of pollutants in our environment.

________. Environmental Education Reporter. Tallahassee: Department of Education. (Periodically issued.)
This occasional newsletter contains current information on environmental education happenings in Florida. Notices of workshops, meetings of interest, recent publications, and new environmental education projects are also included in this newsletter.

LaHart, David E. "Florida's Endangered Dozen," Florida Wildlife Magazine, February, 1973, pp. 15-22.
Rare and endangered animals are of interest to all age groups. This article discusses 12 species that are hovering on the brink of extinction and what men are doing to save them. A color centerfold makes this reprint excellent bulletin board material.

Tillis, C. Richard. The Florida Master Plan and Action Guide for Environmental Education. Tallahassee: Department of Education, 1971.
The master plan outlines Florida's goals and objectives for the coming year. It includes a step-by-step approach to developing an environmental awareness in the citizenry of Florida by using public schools.

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES: DIVISION OF HEALTH:

The Division of Health is one of nine divisions of the Department of Health and Rehabilitative Services which has field service through 67 county health departments. Each county health department is available to work with the local school systems in addition to personnel from the Division of Health. "Public health is the art and science of preventing disease, prolonging life and promoting physical and mental efficiency through organized community effort" and is the aim of the Division of Health.

The following publications may be ordered from: Health Education Section, P. O. Box 210, Jacksonville, Florida 32201.

Pamphlet Order Form. A categorical listing of pamphlets available free from the Health Education Section, Division of Health. Over 400 different titles.

Florida Health Notes. A monthly publication of the Division of Health on various health and related subject areas particularly geared to Florida. Name may be placed on mailing list by writing to the Division of Health.

Films. An annotated list containing over 600 titles of 16mm films and other aids available to teachers. Order form and details on how to order films included. Catalog in school library.

DEPARTMENT OF NATURAL RESOURCES

The Department of Natural Resources is Florida's major environmental management agency. The Division of Interior Resources is involved with flood control, water management, water resource conservation and Florida's geological survey. The Division of Recreation and Parks is responsible for the supervision, regulation and control of all state-owned public parks, monuments, memorials and sites of historic interest and value. The Division has Naturalists located in Panama City, Deland, Fort White, Osprey and Hobe Sound.

The Division of Marine Resources is responsible for protection of marine crustaceans, shell and anadromous fisheries. This Division also serves as a clearinghouse for erosion control, beach preservation and hurricane protection. The Division maintains a research laboratory in St. Petersburg.

The following publications may be ordered from: Department of Natural Resources, Larson Building, Tallahassee, except those that are identified as available from the Marine Laboratory, Post Office Drawer F, St. Petersburg.

Department of Natural Resources. Conservation News. Tallahassee: Department of Natural Resources. Monthly.
Florida's Conservation News is a monthly newsletter that keeps Floridians informed of current events in the Department and around the state. It will help keep teachers and students abreast of the fast breaking news involving conservation issues across the state.

________. Florida's Natural Resources. Tallahassee: Department of Natural Resources. 973.
This booklet is designed to give Floridians an overview of our natural resources and their importance in our heritage. It effectively covers Florida's major resources giving statistics and current information about availability and pollution.

________. List of Publications of the Marine Research Laboratory. St. Petersburg, Florida: Florida Department of Natural Resources, 1970. (Order from the Marine Laboratory.)
Lists the technical publications currently available from the Marine Laboratory. This list enables teachers to obtain copies of research reports that resulted from the Marine Lab's investigations.

________. List of Publications of the Division of Interior Resources. Tallahassee: Florida Department of Natural Resources, 1970.
An annotated bibliography of the technical publications available from the Division of Interior Resources. Most of these publications are for sale. Publications are grouped into annual reports, bulletins, reports and information circulars. They provide detailed information on the geology and hydrology of Florida and are of special value to earth science teachers looking for detailed data on local areas.

________. Teachers Unit on Water. This unit is currently being developed and should be available by the fall of 1973. It contains a content booklet for teachers and interdisciplinary activities involving water that are designed to develop an awareness and a comprehension of the importance of water.

Film List. Tallahassee: Department of Natural Resources. (Undated.) (Mimeographed.)
An annotated list containing twenty-eight entries of 16mm films available from the Department of Natural Resources.

Joyce, E. A., Jr. and Ingle, R. M. Current Research of the Marine Laboratory. St. Petersburg, Florida: Marine Research Laboratory, 1970. (Order from the Marine Laboratory.)
Provides a popular account of the various investigations conducted by the Marine Lab including detailed descriptions of the Red Tide studies. Extremely useful for background information on current marine studies.

McQuillan, H. R. Field-Trip Suggestions for Teachers. Tallahassee: Department of Natural Resources. (Undated.) (Mimeographed.)
Here is a practical check-list for classroom teachers who wish to plan a successful field-trip. This article covers pre-trip planning, what to look for on the trip and the all important post-trip summary.

________. The Story of Sea Turtles. Tallahassee: Department of Natural Resources. (Undated.)
This informative bulletin has been written in a question and answer format that enables teachers to extract factual information on sea turtle natural history. The excellent photographs add a high measure of quality to this publication.

DEPARTMENT OF NATURAL RESOURCES: DIVISION OF GAME AND FRESH WATER FISH:

The Division of Game and Fresh Water Fish is constitutionally charged with the enforcement of all laws and regulations relating to terrestrial wildlife and freshwater aquatic life. They are also responsible for aquatic weed control. The commission has regional offices located in Panama City, Lake City, Lakeland, Ocala, and West Palm Beach.

The following publications may be ordered from: The regional office nearest you or from the Game and Fresh Water Fish Commission, Bryant Building, Tallahassee.

Game and Fresh Water Fish Commission. Facts about Florida Bass. Tallahassee: Game and Fresh Water Fish Commission, 1968.
This is part of a series giving basic information on the life history, management and importance of major game animals in Florida. Other animals included in this series are Black Bear, Deer, Doves, Rabbits, Squirrels, Turkey and Quail.

________. Florida Animal Tracks. Tallahassee: Game and Fresh Water Fish Commission, 1968.
A well illustrated brochure showing the tracks of many wildlife species and the tracks of domestic animals they are likely to be confused with. This is a valuable aid on field-trips.

________. Food Plots for Wild Game. Tallahassee: Game and Fresh Water Fish Commission, 1962.
Here is an action approach that can be taught in the field. This brochure provides insight into the reasons and methods of habitat manipulation to increase animal populations. Teachers will find it especially valuable to help guide projects that involve habitat management.

________. What is Conservation? Tallahassee: Game and Fresh Water Fish Commission, 1968.
This is a philosophical approach to the major problems in resource conservation. It includes major sections on natural balance, pollution, management and relates these concepts to man's survival on planet earth.

________. Snakes Can Kill. Tallahassee: Game and Fresh Water Fish Commission, 1968.

Snakes are an important part of Florida's environment but due to misunderstanding they are often killed indiscriminately. This brochure discusses the natural histories of Florida's five poisonous snakes, precautions to prevent being bitten and the first-aid treatment of snake bites. Also included is a section on snakes in fact and fiction. While the brochure lacks ecological perspective and fails to discuss the non-poisonous snakes, it does provide valuable information on the more spectacular part of our herpafauna.

LaHart, David E. Florida's Endangered Dozen. Florida Wildlife, Vol. 26, No. 9. February, 1973. (reprint)

Animals that are rare and endangered are of interest to all age groups. This article discusses 12 species that are hovering on the edge of extinction and what men are doing to save them. The color centerfold depicts these animals in their natural habitat and makes an excellent bulletin board display.

Wildlife Management Institute. Wildlife--The Environmental Barometer. Tallahassee: Game and Fresh Water Fish Commission. (Undated.)

Animal populations are often more sensitive to environmental changes than is man. This brochure relates man to wildlife and wildlife to our various environmental problems, such as pollution, loss of wetlands and expanding human populations. The result of these environmental degradations is a reduction of wildlife populations and a subsequent loss of quality in the human environment. This is a philosophical approach to the relationship between man, wildlife and a quality environment.

DEPARTMENT OF POLLUTION CONTROL

The Department of Pollution Control is charged with developing a comprehensive program for prevention, abatement and control of air and water pollution. It can issue orders to stop pollution and can enforce such orders by appropriate administrative or legal proceedings. Regional offices are located in Gulf Breeze, Jacksonville, Winter Haven, Orlando, Punta Gorda and Fort Lauderdale.

The following publications may be ordered from: Department of Pollution Control, 2562 Executive Center, Circle E, Tallahassee 32301.

Department of Air and Water Pollution Control. Air Pollution Control in Florida. Tallahassee: Department of Pollution Control. (Undated.)
This eight page booklet serves as an interesting primer on the problems associated with air pollution. Major sections include the effects of air pollution, the costs of air pollution, and what can be done to control it.

________. Annual Report. Tallahassee: Department of Pollution Control. (Issued yearly.)
This yearly accumulation of important statistics is a valuable reference for students and teachers interested in obtaining factual data related to the magnitude of Florida's pollution problems. The report also contains information on the enforcement of existing laws.

________. Eutrophication--A Florida Water Quality Problem. Tallahassee: Department of Pollution Control, 1971.
Lakes, like everything else in nature, begin dying as soon as they are born. This booklet describes the natural process of aging in fresh water lakes and how man has speeded up this process. Many classroom demonstrations can be developed from the basic ideas provided here.

________. Newsletter. Tallahassee: Department of Pollution Control, Monthly.
The Department Newsletter provides current information on such timely topics as the new forest burning rules, dredge and fill permits and attempts at restoring Lake Apopka. It provides a handy way to keep up with the rapidly developing pollution control news around Florida.

________. Water Pollution Control in Florida. Tallahassee: Department of Pollution Control. (Undated.)
Here is a brief but informative booklet on the economic and esthetic problems involved in the complex problem of water pollution. The section on your role in pollution control takes an active approach that can be initiated at the classroom level producing personal involvement.

SECTION V

Federal Agencies

There are many Federal Agencies active in the area of environmental education. The following list includes major groups actively interested in environmental education; some offer a broad series of publications, others offer technical assistance.

Atomic Energy Commission
Washington, D.C. 20545

Bureau of Land Management
National Park Service
Fish and Wildlife Service
Washington, D.C.

Department of Agriculture
Washington, D.C. 20250

Department of Health, Education and Welfare
330 Independence Avenue, S.W.
Washington, D.C. 20202

Department of Housing and Urban Development
451 - 7th Street, S.W.
Washington, D.C.

Department of the Interior
18th and C Streets, N.W.
Washington, D.C. 20240

Environmental Protection Agency
401 M Street, S.W
Washington, D.C 20460

Federal Energy Administration
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20461

National Aeronautics and Space Administration
7th and Independence Avenue, S.W.
Washington, D.C. 20546

National Science Foundation
1800 G Street, N.W.
Washington, D.C. 20550

Smithsonian Institute
1000 Jefferson Drive, S.W.
Washington, D.C. 20560

SECTION VI

Commercial Sources of Free Environmental Information

American Nuclear Society
244 East Ogden Avenue
Hinsdale, Illinois 60521

Nuclear Power and the Environment - Questions and Answers, 1974. Contains understandable and useful information and answers to commonly asked questions on nuclear power and the environment.

Activity Guide for Teachers and Students: Living with Energy includes spirit masters with life-style/conservation activities from Director, Youth and Educational Activities, Standard Oil Co. (Indiana), Mail Code 3705, 200 E. Randolph Dr., Chicago, ILL 60601. FREE.

The Energy Saving Game

Produced by Ownes-Corning Fiberglass Corporation
Fiberglass Tower
Toledo, Ohio

Lively colored and cartoon-illustrated board game. One sheet of paper has the game itself, the instructions, and materials needed.

Living with Energy (activity guide)

Mr. Dak Sapper, Director
Youth and Educational Activities
Standard Oil Company (Indiana)
Mail Code 3705
200 E. Randolph Drive
Chicago, Ill. 60601

A self-contained unit containing for spirit masters and a teacher's guide. The materials emphasize that new energy conservation habits are needed.

"Energy, America, and You"
Information Sheet 6

Johnny Horizon News Bureau
Washington, D.C. 20240
202/343-6101

Single sheet newsletter with hints on energy conservation and activities for children of various grade levels.

The Energy Crisis: What You Can Do About It

4-H Petroleum Power Program (member Leader Energy Kit)
produced by Amoco Oil Company

National 4-H Service Committee, Inc.
150 Northwacker Drive
Chicago. Illinois 60606

A teacher's guide for a unit in energy with four spirit masters on energy sources and energy conservation.

The Plain Brown Rapper

Science Education Resource Center
American Museum of Atomic Energy
P.O. Box 117
Oak Ridge, Tenn. 37830

Free to teachers

This pamphlet contains information on different types of energy activities, games and resources available to classroom teachers. Includes short descriptions and addresses for the materials.

Thomas Alva Edison Foundation
Cambridge Office Plaza, Suite 143
18280 West Ten Mile Road
Southfield, Michigan 48075

Edison Experiments, 1973. Text by Robert F. Schultz.

Grades 5-10.

Edison Inventions and Related Projects, 1971.

Text by Robert F. Schultz, Grades 5-10.

Electrical and Chemical Experiments ... from Edison, 1973.

Text by Robert F. Schultz - Grades 4-8.

Electrical Experiments You Can Do: From the Diary of Michael Faraday, 1974. Text by Robert F. Schultz, Grades 5-10.

Energy Conservation - Experiments You Can Do .... from Edison, 1974. Grades 5-10.

How to Build Five Useful Electrical Devices, 1971.

Text by Robert F. Schultz

Thomas Alva Edison's Associate, Lewis Howard Latimer, A Black Inventor: A Biography and Related Experiments You Can Do, 1973. Grades 5-10

McDonald's Corporation
McDonald's Plaza
Oak Brook, Illinois 60521

McDonald's Ecology Action Pack, developed by The Dayton Museum of Natural History staff. Contains spirit masters and things to make.

National Recreation and Park Association
1601 N. Kent Street
Arlington, Va. 22209

A non-profit membership organization devoted to improving and expanding the nation's park, recreation and leisure services and resources. Conducts the Park Project on Energy Interpretation.

National Coal Association
1130 17th St., N.W.
Washington, D.C. 20036

The trade association for the major coal companies, offering free information from the industry's perspective.

League of Women Voters of the United States
1730 M Street, N.W.
Washington, D.C.

A very active women's membership organization which lobbies and offers a wide range of educational material on energy and environmental maters, as well as other subjects.

American Petroleum Institute
1801 K Street, N.W.
Washington, D.C. 20006

The trade association for the major oil companies. Has a wealth of free information from the industry's perspective.

The Atomic Industrial Forum
1747 Pennsylvania Avenue, N.W.
Washington, D C. 20006

Association representing nuclear power interests. Free publications relating the association's views on nuclear power.

The Household Energy Game
1974, University of Wisconsin
Sea Grant College Program
1800 University Avenue
Madison, Wisc. 53706

20-page booklet designed toshow you how much energy your household uses and how you can conserve energy and save money.

Energy-Environment Materials Guide
Murvine, Kathryn E. and Rebecca E. Cawley
1742 Connecticut Avenue, N.W.
Washington, D.C. 20009
National Science Teachers Association, 1975

Readings representing a sampling of current energy literature. References divided into four separate bibliographies: Readings for Teachers, Readings for Students (grade 8-12), Readings for Students (grade 5-9), and Readings for Students (grade K-6).

Pesticides Agriculture and the Environment -- Some Often Asked Questions
CIBA-GEIGY Corporation
Agricultural Division
Ardsley, N.Y. 10502

Free - Defends proper use of pesticides. 22 pp.

New Alchemy Institute
P.O. Box 432
Woods Hole, Mass. 02543

A private research organization working on ways to make available low-cost solar energy technology.

Zero Population Growth
1346 Connecticut Avenue, N.W.
Washington, D.C. 20036

An activist population group working to reduce population growth in the U.S. and the world.

Guard Your Garden (Poster)

H.D. Hudson Mfg. Company
154 E. Erie Street
Chicago, IL. 60611

Free - 2-color poster. How to apply the pesticides which are needed for lawn and garden care so as to get the job done with minimum overall threat to the environment. Size 18" x 24".

Conserving Our Waters and Clearing the Air

American Petroleum Institute
1801 K. Street, N.W.
Washington, D.C.

Free - upon request. Student activities. Teacher's guide. Some activities suitable for elementary.

A Primer on Water Pollution

Mobil Oil Corporation
150 E. 43rd Street
New York, N.Y. 10017

Free - Newspaper style pamphlet discussing water pollution with heavy emphasis on oil spills.

It's Time We Face America's Water Problem

Caterpillar Tractor Company
Advertising Division
Peoria, IL 61611

Free - With facts, historic data and pictures, this booklet identifies the problems of water mis-management and ways to solve them.

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Water Pollution - Causes and Cures

Manufacturing Chemists Association
1825 Connecticut Avenue, N.W.
Washington, D.C. 20009

Free - Teacher and student resource. Well illustrated booklet on Waste-water treatment.

Conserving Our Waters and Clearing the Air

American Petroleum Institute
1801 K. Street, N.W.
Washington, D.C. 20009

Free - Study Unit for Science and Social Studies Classes, 1968. The source materials include information on the source and information on weather and the point, line, and area sources of pollution. Upper elementary and secondary.

Air Polution Explained: What You Can Do

National Tuberculosis and
Respiratory Disease Association, 1970.

Free from your local TB & RD Assoc. Suggested ways individuals can personally reduce air pollution. Pamphlet.

Air Pollution. Ranger Rick Reprint

National Wildlife Federation
1412 16th Street, N.W.
Washington, D.C. 20036

Single copy free. Excellent student reference. Mark and Jimmy find out which of man's activities cause pollution, find out how to measure the amount of particulates in the air, and compile a list of things people can do to help the situation.

Professor Clean Asks - What is Air Pollution?

General Motors Corporation, Public Relations Staff
1-101 General Motors Building
Detroit, Michigan 48202

Free upon request. Story of air pollution and cars (elementary level). Basics of air pollutants and what is being done to make cars less of air pollution problems. Illustrated with children's drawings.

A Primer on Air Pollution

Mobil Oil Corporation
150 East 42nd Street
New York, N.Y. 10017

Free upon request. Newspaper size, cartoon-illustrated, pamphlet summarizing automobile, industrial, and home (fuel) sources of air pollution. Section on automobile covers gas tank and carburetor, crankcase, and engine sources. Alternative automobile engines and industrial-home fuels are covered.

Questions and Answers About the Electric Utility Industry

Edison Electric Institute
Educational Service
90 Park Avenue
New York, N.Y. 10016

Free - Statistics regarding cost, fuel sources, present and anticipated need, and similar topics related to the electric utility industry. In question and anwer format with minimum interpretation of the data. Teacher resource.

Natural Gas Energy and the Environment

American Gas Association
Educational Services
1515 Wilson Blve.
Arlington, Virginia 22209

Free - Ecological effects of burning fossil fuels and the general problem of diminishing energy resources. Teacher resource.

Facts About Oil

American Petroleum Institute
1801 K Street, N.W.
Washington, D.C. 20006

Free - Booklet. Factual material about the oil industry prepared for the teacher. Teacher resource.

Case Against Hard Pesticides, The

National Wildlife Federation
1412 16th Street, N.W.
Washington, D.C. 20036

Free - Reprint from Michigan Conservation, Jan. - Feb., 1968, by Ralph A. MacMullan. This booklet discusses the evidence against persistent chemicals such as DDT, heptachlor, lindane, aldrin, endrin, dieldrin, and chlordane, and possible legislation against their use.

SECTION VII

Organizations Concerned with the Environment

American Conservation Association
30 Rockefeller Plaza
New York, New York 10020

Conservation Foundation
1717 Massachusetts Avenue, N.W.
Washington, D.C. 20036

Garden Club of America
598 Madison Avenue
New York, New York 10027

Izaak Walton League of America
1800 N. Kent Street
Arlington, Virginia 22209

Keep America Beautiful, Inc.
99 Park Avenue
New York, New York 10016

League of Women Voters of the United States
1730 M Street, N.W.
Washington, D.C.

National Audubon Society
1130 - 5th Avenue
New York, New York 10028

National Geographic Society
1145 - 17th Street, N.W
Washington, D.C. 20036

National Wildlife Federation
1412 - 16th Street, N.W.
Washington, D.C. 20036

Sierra Club
1050 Mills Tower
220 Bush Street
San Francisco, California 94104

Zero Population Growth, Inc.
1346 Connecticut Avenue, N.S.
Washington, D.C. 20036

SECTION VIII

Resources of the Dade County Public Schools

ECOLOGY IN THE ELEMENTARY SCHOOL

Curriculum Bulletin 8B-1

Ecology in the Elementary School are a series of ecological activities in science, social studies, mathematics and art based on the strand idea and uses the process approach.

The Environmental Education Center in Crandon Park

This is a two-day program for sixth graders who are transported to the site. Emphases are on marine and land ecology of the area and the importance of maintaining a balanced environment.

Long Pine Key Environmental Study Area

Groups of sixth grade students are transported to the area in Everglades National Park for a one day experience. The Park personnel conduct workshops in the Long Pine Key area for teachers before they are scheduled to take their children to the park.

Vizcaya Nature Trails

These trails show a beautiful hardwood hammock, a fresh water pond, a growth of mangroves and an unusual moot that exposes geological strata. Two teachers who are assigned to the Museum of Science schedule and conduct one-day study trips on the trail for groups of thirty.

SOUTH FLORIDA ENVIRONMENTAL SCIENCE (ELEMENTARY)
MEDIA UNITS AND SUBTOPICS

GRADES 1 AND 2

Unit XXII: EARTH AV #3-60301 Subtopic A: Soil Grade 1	Three local soil components; sand, marl and muck, are classified on the basis of color.
Subtopic B: Soil Mixture Grade 2	Three soil components; limestone fragments. sand and marl, are separated by gravity. The height of each layer is measured in centimeters. The measurements are used to order the components.
Subtopic C: Wet Soil Grade 2	The water holding capacities of three soil components; sand, marl and muck are determined in milliliters. The components are ordered on the basis of the measurement
Unit XXIII: AIR AV #3-60302 Subtopic A: Hearing, Seeing Telling Grade 2	Statements concerning a falconer and a red-tailed hawk are categorized as observations or inferences.
Subtopic B: Dirty Air Grade 1	Data from an air-filtration experiment are recorded on a bar graph.
Subtopic C: Bad Weather Grade 1	Examples of severe weather events are observed. Safety precautions and rules are elicited.
Unit XXIV: WATER AV #3-60303 Subtopic A: Water Bird Grade 2	An incomplete bar graph concerning a small population of Roseate Spoonbills is used to introduce prediction.
Subtopic B: Describing Water Grade 1	Water from various sources is observed using all five senses. Descriptive statements are elicited.
Subtopic C: Soap Bubbles Grade 1	The sudsing capacities of seawater, tap water and rainwater are determined experimentally. The heights of the suds produced are measured with a decimeter ruler. The water solutions are ordered according to the measurements.
Unit XXV: LIFE AV #3-60304 Subtopic A: Living or Nonliving? Grade 1	A poodle and a stuffed replica of a poodle are observed. Four characteristics of life are derived that can be used to classify objects as living or nonliving
Subtopic B: Real or Fake? Grade 1	A palm and a plastic replica of a palm are observed. Four characteristics of life are derived that can be used to classify objects as living or nonliving.
Subtopic C: Telling and Listening Grade 2	A game situation is used to accentuate the value of making specific references to physical characteristics when verbally describing an object to another person.

SOUTH FLORIDA ENVIRONMENTAL SCIENCE (ELEMENTARY)
MEDIA UNITS AND SUBTOPICS

GRADES 3 and 4

Unit XXVI: EARTH AV #3-60305 Subtopic A: Beach Erosion Grade 4	Data on a line graph concerning beach erosion is interpreted.
Subtopic B: People Movers Grade 3	A map scale is used to determine the distance in kilometers between two points on a mass transit route.
Subtopic C: The Metal Hunters Grade 3	Observational and inferential statements are categorized during a treasure hunt. An electronic metal detector is used.
Unit XXVII: AIR AV #3-60306 Subtopic A: Sun Screens Grade 4	Two vacationing students test the sun screening properties of their favorite sun tan lotions. Several uncontrolled variables in their experimental design are identified and corrected.
Subtopic B: Sky at Night Grade 3	A simple system, for classifying objects, such as the star Sirius, on the basis of observable characteristics is evolved.
Subtopic C: Air Abuse Grade 3	Discrepant data added to a line graph based on information obtained from Pollution Control results in the modification of an original prediction.
Unit XXVIII: WATER AV #3-60307 Subtopic A: Tap Water Grade 3	The numerous math activities that can be developed with an eyedropper, beaker of water and a ten milliliter graduated cylinder emerge during a visit to a water treatment plant.
Subtopic B: Death of Our Waters Grade 4	The viewer is assisted in formulating a model for the conversion of raw sewage to effluent at a sewage treatment plant.
Subtopic C: Surface Slicks Grade 4	A series of inferences leads the viewer to an hypothesis, advanced by local scientists, concerning the concentration of pesticides in the surface water of Biscayne Bay.
Unit XXIX: LIFE AV #3-60308 Subtopic A: Animal Trackers Grade 3	Animal tracks are investigated and statements of observation are constructed.
Subtopic B: Salt Marsh Enemy Grade 4	An operational definition is evolved and used to differentiate the mosquito from insects similar in appearance.
Subtopic C: Scientific Fishing Grade 4	Experimental design is introduced by observing a natural reef and its inhabitants in order to create an artificial reef that will attract the same organisms.

SOUTH FLORIDA ENVIRONMENTAL SCIENCE (ELEMENTARY)
MEDIA UNITS AND SUBTOPICS

GRADES 5 AND 6

Unit XXX: EARTH AV #3-60309 Subtopic A: A Mammoth Find? Grade 6	A mysterious underwater cache of bones in a cypress swamp supplies archaeologists with new data to interpret concerning prehistoric mammals of south Florida.
Subtopic B: Sky Sleuth Grade 5	Aerial photographs of Everglades National Park provide unusual data for the viewer to interpret.
Subtopic C: Oil versus Environment Grade 5	Florida's rapidly expanding oil industry supplies numerous opportunities for activities in mathematics.
Unit XXXI: AIR AV #3-60310 Subtopic A: Project Stormfury Grade 5	An operational definition for hurricane seeding is developed.
Subtopic B: Pesticide; Friend or Foe? Grade 5	A careless use in south Florida of a pesticide illustrates the impact of an uncontrolled variable upon the balance of nature.
Subtopic C: Sailing Pointers Grade 6	Observations on the movement of a sailboat lead to the formulation of a model.
Unit XXXII: WATER AV #3-60311 Subtopic A: Mystery Bottle Grade 5	A series of inferences based on observations of marine currents lead to the formulation of an hypothesis concerning high-yield bottle collecting sites.
Subtopic B: Water and Climate Grade 6	The viewer is lead through a series of inferences drawn from indirect observations to the formulation of an hypothesis concerning the climate of south Florida and the Everglades water cycle.
Subtopic C: East to Bimini Grade 6	A fishing trip to Bimini sets the stage for an experiment concerned with the effect of the Gulfstream upon a course heading.
Unit XXXIII: LIFE AV#3-60312 Subtopic A: Uncovering the Past Grade 6	An operational definition describing the accepted procedure for excavating at an archaeological site is developed at "Largo Site One."
Subtopic B: Running Wild Grade 6	Problems arising from the escape of exotic plants and animals in south Florida exemplify the effect of uncontrolled variables on the balance of nature.
Subtopic C: Measuring in Microns Grade 5	Measuring organisms from the environment leads to the need for metric measurement smaller than the millimeter.

SECTION IX

Environmental Curriculum Projects

and

Commercial Environmental Program

ESEA, Title III, Project #050-2323-73003
"Broad Spectrum Environmental Education Program"

Brevard County
Center for Environmental Learning
A Demonstration/Diffusion Center
705 Avocado Avenue
Cocoa, Florida 32922

An interdisciplinary environmental learning program for K-12.

The Environmental Studies Program

ES
P.O. Box 1559
Boulder, Colo. 8030?

The Environmental Studies material are a strongly multidisciplinary program representing a many faceted involvement with the environment including art, science, social studies and mathematics.

Adventurer In Environment

Silver Burdett Company
Box PM-S
Morristown, New Jersey

"A series of paperback texts that tie environmental awareness into your everyday lesson".

Environmental Studies Center
2900 N.E. Indian River Drive
Jensen Beach, Florida 33457

This is a handi-on, field oriented study of an estarine area on Florida's east coast. There are five elements to the program: student learning materials; teacher background materials; teacher inservice materials; field study outlines; and a physical "center" housing displays, labs and classrooms.

OBIS

Outdoor Biology Instructional Strategies

Lawrence Hall of Science
Room 119
University of California
Berkeley, California 94720

OBIS is a series independent and sequential activities to promote the understanding of ecological relationship. These activities are suitable for both large and small groups of students and many activities are adaptable to individualized use.